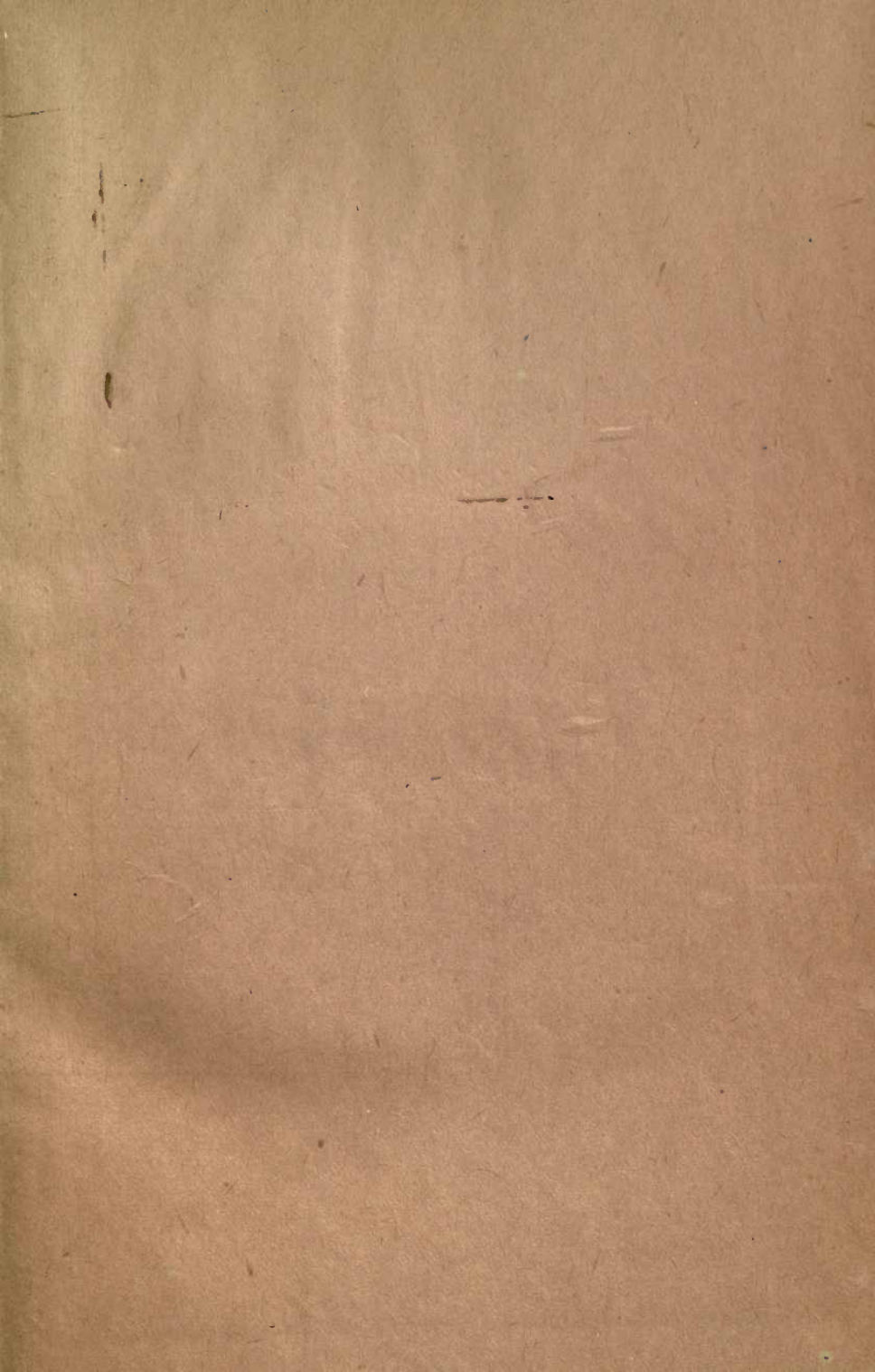
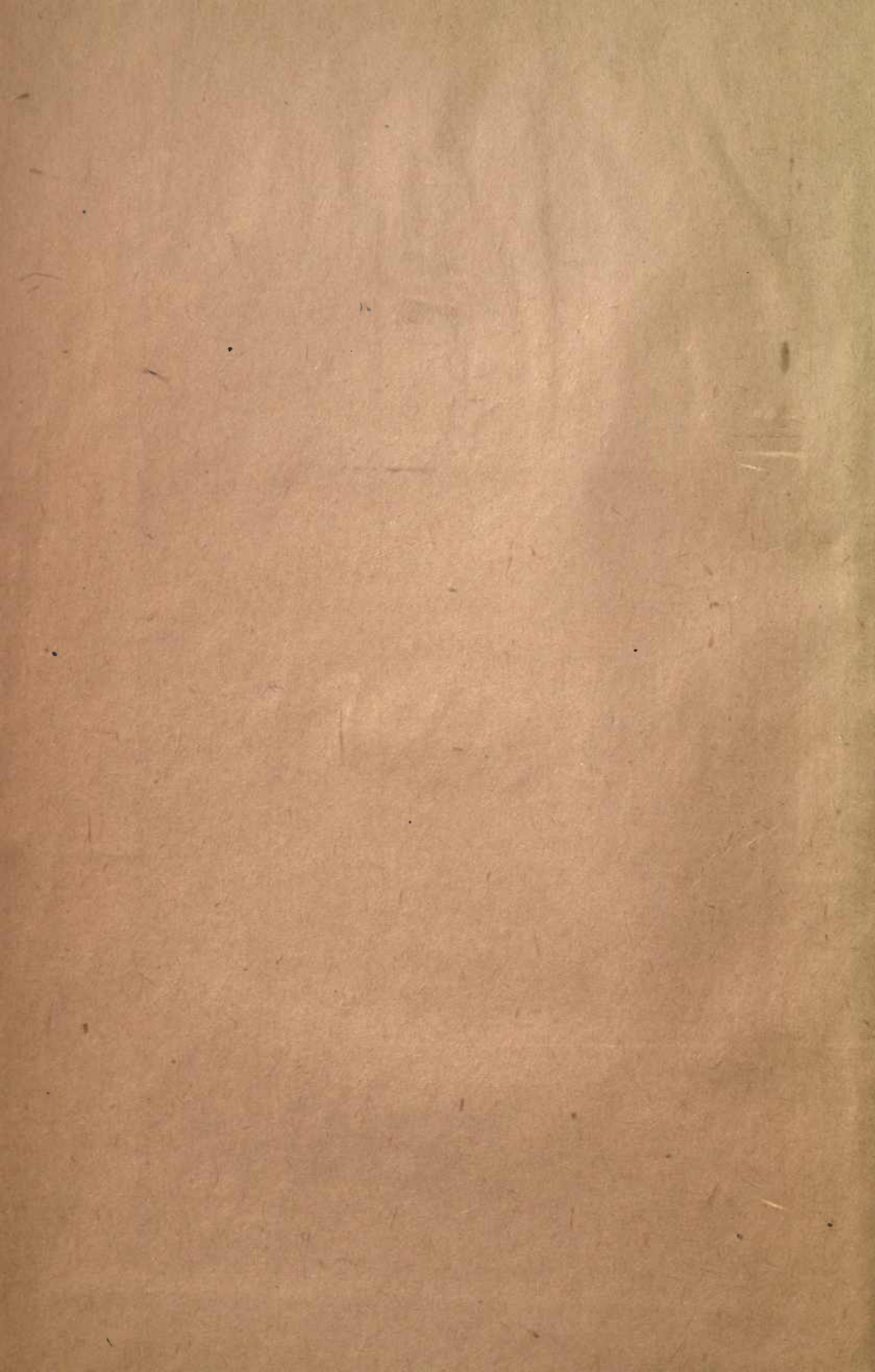


LIBRARY
OF THE
UNIVERSITY OF CALIFORNIA.

RECEIVED BY EXCHANGE

Class





New York State Museum

JOHN M. CLARKE Director

Bulletin 89

ARCHEOLOGY 11

ABORIGINAL USE OF WOOD IN NEW YORK

BY

WILLIAM M. BEAUCHAMP S.T.D.

	PAGE		PAGE
List of authorities.....	87	Ceremonial articles.....	169
Fire-making	91	Idols	172
Food.....	93	Musical instruments.....	174
Houses.....	94	Hunting	177
Forts	110	Games	180
Burial.....	116	False faces.....	184
Weapons	120	Miscellaneous	192
Warlike usages.....	131	Conclusion	196
Canoes and fishing.....	139	Explanations of plates.....	197
Household articles.....	149	Index	267
Land travel and transportation..	160		

ALBANY

NEW YORK STATE EDUCATION DEPARTMENT

1905

STATE OF NEW YORK
EDUCATION DEPARTMENT

Regents of the University

With years when terms expire

1913	WITELAW REID M.A. LL.D.	<i>Chancellor</i>	-	-	-	New York
1906	ST CLAIR MCKELWAY M.A. L.H.D. LL.D. D.C.L.					
	<i>Vice Chancellor</i>	-	-	-	-	Brooklyn
1908	DANIEL BEACH Ph.D. LL.D.	-	-	-	-	Watkins
1914	PLINY T. SEXTON LL.D.	-	-	-	-	Palmyra
1912	T. GUILFORD SMITH M.A. C.E. LL.D.	-	-	-	-	Buffalo
1907	WILLIAM NOTTINGHAM M.A. Ph.D. LL.D.	-	-	-	-	Syracuse
1910	CHARLES A. GARDINER Ph.D. L.H.D. LL.D. D.C.L.					New York
1915	CHARLES S. FRANCIS B.S.	-	-	-	-	Troy
1911	EDWARD LAUTERBACH M.A.	-	-	-	-	New York
1909	EUGENE A. PHILBIN LL.B. LL.D.	-	-	-	-	New York
1916	LUCIAN L. SHEDDEN LL.B.	-	-	-	-	Plattsburg

Commissioner of Education

ANDREW S. DRAPER LL.D.

Assistant Commissioners

HOWARD J. ROGERS M.A. LL.D. *First Assistant Commissioner*
EDWARD J. GOODWIN Lit.D. *Second Assistant Commissioner*
AUGUSTUS S. DOWNING M.A. *Third Assistant Commissioner*

Secretary to the Commissioner

HARLAN H. HORNER B.A.

Director of Libraries and Home Education

MELVIL DEWEY LL.D.

Director of Science and State Museum

JOHN M. CLARKE LL.D.

Chiefs of Divisions

Accounts, WILLIAM MASON
Attendance, JAMES D. SULLIVAN
Examinations, CHARLES F. WHELOCK B.S.
Inspections, FRANK H. WOOD M.A.
Law, THOMAS E. FINEGAN M.A.
Records, CHARLES E. FITCH L.H.D.
Statistics, HIRAM C. CASE

New York State Museum

JOHN M. CLARKE Director

Bulletin 89

ARCHEOLOGY II

ABORIGINAL USE OF WOOD

IN

NEW YORK

LIST OF AUTHORITIES

Abbreviations at the left are used in the bulletin in exact reference to works in the following list

- | | |
|-----------------|---|
| Barber and Howe | Barber, J. W. and Howe, Henry. Historical Collections of New York. N. Y. 1841. |
| Bartram | Bartram, John. Observations on the Inhabitants, Climate, Soil, Rivers, Productions, Animals in Travels from Pensilvania to Onondago, Oswego and Lake Ontario. Lond. 1751. Reprinted in Geneva N. Y. 1895. |
| Beauchamp | Beauchamp, Rev. W: M. The Iroquois Trail, or Footprints of the Six Nations. Fayetteville N. Y. 1892.
<small>This includes David Cusick's Sketches of Ancient History of the Six Nations, with ample notes added.</small> |
| | ———— Iroquois Games. Jour. Am. Folk-lore. Bost. 1896. |
| Boyle | Boyle, David. Archaeological Report of 1898, being part of Appendix to the Report of the Minister of Education for Ontario. Toronto 1898. |
| Bruyas | Bruyas, Jacques. Radices Verborum Iroquoeorum. J. G. Shea. N. Y. 1863.
<small>Radical words of the Mohawk language. Appendix E, 16th Annual Report of the New York State Museum, Albany 1863. Same paging.</small> |
| Cammerhoff | Cammerhoff, Frederick. Diary of the Journey of Bro. Cammerhoff and David Zeisberger to the 5 Nations, from May 3-14 to August 6-17, 1750. Mss. |
| Catlin | Catlin, George. Letters and Notes on the Manners, Customs and Condition of the North American Indians. Lond. 1842. |

- Champlain** **Champlain, Samuel de.** Oeuvres de Champlain, publiées sous le patronage de l'Université Laval. Par l'Abbé C. H. Laverdière. Quebec 1870.
- Charlevoix** **Charlevoix, P. F. X. de.** Journal of a Voyage to North America; tr. from the French. Lond. 1761.
- Clark** **Clark, J. V. H.** Onondaga; or Reminiscences of Earlier and Later Times. Syracuse 1849.
- Conover** **Conover, George S.** Journals of the Military Expedition of Major-General John Sullivan against the Six Nations of Indians in 1779. Auburn 1887.
- Converse** **Converse, Mrs Harriet Maxwell.** Iroquois Masks; an illustrated article in a New York city paper of 1899.
- Culin** **Culin, Stewart.** Chess and Playing Cards. Wash. 1898.
- Dall** **Dall, William H.** On Masks, Labrets, and certain Aboriginal Customs.
In Report of U. S. Bureau of Ethnology, v. 3. Wash. 1884.
- Dawson** **Dawson, Sir J. W.** Fossil Men and their Modern Representatives. Lond. 1883.
- De Bry** **De Bry, Theodorus.** Admiranda Narratio fida tamen, de Commodis et Incolarum Ritibus Virginiae, etc. Francoforti ad Moenum. 1590.
- De la Potherie** **De la Potherie, Bacqueville.** Histoire de l'Amérique Septentrionale. Paris 1722.
- De Schweinitz** **De Schweinitz, Edmund.** Life and Times of David Zeisberger. Phil. 1870.
- De Vries** **De Vries, David Peter.** Third Voyage of David Peter De Vries to North America. N. Y. Hist. Soc. Collections. Ser. 1, v. 5
- Doty** **Doty, L. L.** History of Livingston County. Geneseo 1876.
- Gookin** **Gookin, Daniel.** Historical Collections of the Indians in New England. Mass. Hist. Soc. Collections. Bost. 1792.
- Hale** **Hale, Horatio.** Iroquois Book of Rites. Library of Aboriginal American Literature, no. 2. Phil. 1883.
- Heckewelder** **Heckewelder, J. G. E.** History, Manners and Customs of the Indian Nations who once Inhabited Pennsylvania. Penn. Hist. Soc. Memorials, v. 12. Phil. 1876.
- Henry** **Henry, Alexander.** Travels and Adventures in Canada and the Indian Territories. Toronto 1901.
- Higgeson** **Higgeson, Rev. Mr.** New England's Plantation. 1630. Mass. Hist. Soc. Collections. Bost. 1792.

- Hough** **Hough, Walter.** Primitive American Armor. Wash. 1895.
- Josselyn** **Josselyn, John.** Account of two Voyages to New England; dated in 1675. Bost. 1865.
Also in Mass. Hist. Soc. Collections, Ser. 3, v. 3.
- Jour. Am. Folk-lore** **Journal of American Folk-lore;** begun in 1888. Bost.
- Kalm** **Kalm, Peter.** Travels into North America (1749); tr. by J. R. Forster. Lond. 1772.
- Ketchum** **Ketchum, William.** An Authentic and Complete History of Buffalo. Buffalo 1864.
Lettered *Buffalo and the Senecas*, and commonly so called.
- Lafitau** **Lafitau, J. F.** Moeurs des Sauvages Amériquains. Paris 1724.
- Lahontan** **Lahontan, A. L. de D.** New Voyages to North America. Lond. 1735.
- Loskiel** **Loskiel, G. H.** History of the Missions of the United Brethren among the Indians in North America; tr. from the German by C. I. La Trobe. Lond. 1794.
- McMasters** **McMasters, Guy H.** History of Steuben County. Bath N. Y. 1853.
- Marshe** **Marshe, Witham.** Journal of the Treaty held with the Six Nations by the Commissioners of Maryland and other Provinces in Lancaster in Pennsylvania, June 1744. Mass. Hist. Soc. Collections. Bost. 1801.
- Mason** **Mason, Otis T.** Primitive Travel and Transportation. Wash. 1896.
- Mason, Basketry** ———— Aboriginal American Basketry. Wash.
- Mercer** **Mercer, Henry C.** Light and Fire making. Phil. 1898.
- Morgan** **Morgan, Lewis H.** League of the Ho-de-no-sau-nee, or Iroquois. Rochester. 1851.
Quotations are made here from the two volume edition edited by Herbert M. Lloyd. N. Y. 1901.
- Morse** **Morse, Jedidiah.** Geography. 1795.
- Moulton** **Moulton, Joseph W.** History of the State of New York. Pt 2, Novum Belgium. N. Y. 1826.
- O'Callaghan** **O'Callaghan, E. B. ed.** Documentary History of the State of New York. O. Alb. 1849-51.
- O'Callaghan, Col. Doc.** ———— Documents relating to the Colonial History of the State of New York. Alb. 1853-87.
- Penn. Archives** **Pennsylvania Archives.** New ser. v. 4. Phil.
- Pouchot** **Pouchot, M.** — Memoir upon the Late War in North America between the French and English, 1755-60; tr. and ed. by F. B. Hough. Roxbury Mass. 1866.
- Proctor** **Proctor, Col. Thomas.** Journal of 1791. Pennsylvania Archives. New ser. v. 4. Phil.

ABORIGINAL USE OF WOOD IN NEW YORK

Fire-making

The aborigines of New York had three means of adapting wood to their use. With fire they felled trees and reduced them to any desired length. With this they hollowed their mortars and canoes, as well as some household utensils. Stone and shell implements aided in this, removing the charred wood. Sand was also used, either as a gritty cutting stone, or in its free and granulated form, aided by water. The use of metals changed all this in most cases, but not in all. For dugout canoes and wooden mortars fire is still employed, chipping and burning following each other.

Fire was obtained in several ways. The simple friction of two dry sticks might produce it, as was often done. The Mohawks called this process *ganniegarrannie*, which was an expansion of their own name. There was also an aboriginal tinder used in most cases, called *tā-hah-nyn-ka'-ose* by the Onondagas. Of one kind in Canada we have this account:

For a wick they have the skin of an eagle's thigh, with the down, which takes fire easily; they strike two pieces of ore together, as we do flint with a piece of iron or steel; in place of matches they make use of a little piece of tinder (it is a piece of wood decayed and very dry, which burns easily and incessantly till it is consumed); having taken fire they put it into some pulverized cedar bark, and blowing gently this bark catches fire. *Relation*, 1634

Another way was by rapidly turning a little cedar stick, but this was a Huron mode, little used by the Algonquins, though in favor with the Iroquois. In his *Light and Fire-making*, Mr H. C. Mercer gives an illustration of the last mentioned method, and also of the mode in use among the Penobscot and Iroquois Indians. His description of the latter follows.

Make a spindle of hard wood (hickory, cedar) weighted as here, with a flywheel made of strips of bark pegged or sewed together. A wythe bow, with a rawhide string caught at the notch on the spindle top, causes the latter to twirl back and forth as you lift and press the bow. For your hearth, notch against the side of a piece of juniper, pine or cedar, twirling your spindle point at a nick previously made in the wood directly over the notch. In about 20

seconds the drill point smokes, while a brown powder scorched from the fraying wood rises around the revolving spindle end and rolls down the notch. If all goes well this dust should ignite into a spark in about a minute. Blow this against dry punk (a locust tree fungus) and fan the latter into flame against fine vegetable fiber, such as frayed cedar bark, leaves and grass. Thus working you make "wild fire" after the ancient method of the Penobscots (according to the late Chief Joseph Nictolar of Old Town, Maine), Iroquois and Siberian Chuckchis. *Mercer*, p.26

Mr L. H. Morgan gives an account of this in the *League of the Iroquois*. As the new edition of this work embodies some valuable matter heretofore accessible only in the reports of the State Museum, it will be more convenient to refer to this edition. Mr Morgan thus described the *da-ya-ya-da-ga'-nea-ta*, or fire drill.

It consisted of an upright shaft about 4 feet in length, and an inch in diameter, with a small wheel set upon the lower part, to give it momentum. In a notch at the top of the shaft was set a string, attached to a bow about 3 feet in length. The lower point rested upon a block of dry wood, near which are placed small pieces of punk. When ready to use, the string is first coiled around the shaft, by turning it with the hand. The bow is then pulled downwards, thus uncoiling the string, and revolving the shaft towards the left. By the momentum given to the wheel, the string is again coiled up in a reverse manner and the bow again drawn up. The bow is again pulled downwards, and the revolution of the shaft reversed, uncoiling the string, and recoiling it as before. This alternate revolution of the shaft is continued until sparks are emitted from the point where it rests upon the piece of dry wood below. Sparks are produced in a few moments by the intensity of the friction, and ignite the punk, which speedily furnishes a fire. *Morgan*, 2:40

Mr Morgan erred in saying this "was the only method of creating fire known to the red man." The Mohawks rubbed two dry sticks together for this, and used flint for striking fire at a very early day, having their common name of Kanienga from *kanien*, flint. With this is associated the use of this stone in producing sparks, its name being apparently derived from that for fire. From their early possession of the fire steel, perhaps while still in Canada, they adopted it as their national symbol, and were represented by this on the record of the treaty of Fort Stanwix in 1768. In describing the

Iroquois in 1736, the French writer said the Mohawks had for their device a *battefeu* -or steel, and a flint.

Mr Morgan has been quoted as though the wheel were of stone, but he did not say this, nor does the figure suggest it. No stone articles have been found in New York which could have had such a use. Figure 5 shows one of these drills. The Onondagas say they once used a slender cylindric stone instead of a stick.

Some stone tools were sharp enough to cut wood, but fire certainly helped much in the coarser work. In small articles flint knives would cut rapidly, though not adapted for a fine finish. It is probable that sandstones or fine sand were used for this. Most antiquarians suppose that the straight grooves made in boulders were for straightening and polishing arrow shafts. They are about the proper size for this and show that sand moved in them in parallel lines. This cuts rapidly when mixed with water. Such boulders, however, for the most part are confined to a limited area in New York, and the requirements of arrow-making may be considered later.

Food

The Indians thought the use of trees as food important. The Adirondack Indians had this name, as equivalent to Tree-eaters, from the Iroquois. To the New England Indians they were known in this way, but Roger Williams seems to have confused them with the Mohawks when he said of them:

Mihtukme'chakick, *Tree Eaters*. A people so called (living between three and four hundred miles West into the land) from their eating only *Michtu'chquash*, that is, Trees: They are *Men-eaters*, they eat no corne, but live on the *bark* of *Chesnut* and *Walnut*, and other fine trees; They dry and eat this *bark* with the fat of Beasts, and sometimes of men. *Williams*, ch.2

In his *Description of the New Netherlands*, published in 1653, Adriaen Van der Donck spoke of the same thing: "Our Indians say that they did eat roots, and the bark of trees instead of bread, before the introduction of Indian corn or maize." *Van der Donck*, 5:137. He rarely distinguished between the Iroquois and Algonquins, but his statement belongs to the latter. Other writers have

noticed the same belief, which properly applies only to periods of famine. The northern Algonquins, who cultivated the ground but little, were more frequently in extremity than the settled Iroquois. To the latter *Adirondack* became a term of contempt, implying insufficient food. As in so many other cases, it was not a name which the Adirondacks chose, but one which their foes gave them. The Onondagas still call them *Ha-te-en'-tox*, or Tree-eaters.

Houses

Something might here be said of the various uses to which the Indians put particular trees, but some of these will appear incidentally. One prominent use was that of shelter from the weather and their foes. In summer the Indian went almost naked, and any tree would protect him from the sun. Rainy days were not so comfortable, and the piercing cold of winter made protection necessary for the family of the hardiest hunter. The forest had its gifts to bestow, and thus the favorite cave-dwellings of some lands are almost unknown in New York. Saplings furnished a strong frame; the broad barks of great trees quickly covered them; tough withes bound all together, and the marshes provided soft mats for luxurious repose. For the home of many years, for the sojourn of a single night, there was everywhere abundant material, nor was it sparingly used.

Most early writers have given accounts of these primitive dwellings, of their variety, structure and size and the ease and rapidity with which they were built. There was less national difference than has been asserted. The Algonquin built the long house as well as the Iroquois, though his frequent changes made him partial to a smaller and simpler form. Roger Williams speaks of "*The long poles*, which commonly men get and fix, and then the women cover the house with mats, and line them with embroydered mats which the women make, and call them *Munnotau'bana*, or *Hangings*, which amongst them make as faire a show as Hangings with us." Williams, ch.5

These poles might have been for a long house, but the general impression is of a round one. He proceeds to say, "Two Families

will live comfortably and lovingly in a little round house of some fourteen or sixteen foot over, and so more and more families in proportion." The latter expression might refer to a longer house, but he does not mention it. In another place he describes one intended for festival purposes. This was "toward Harvest, when they set up a long house called *Qunnekamuck* Which signifies *Long house*, sometimes an hundred, sometimes two hundred foot long upon a plaine near the Court (which they call *Kitteickaïnick*) where many thousands, men and women meet." *Williams*, ch.28

Houses probably varied according to the standing of the person, tribe or nation. The Rev. Mr Higgeson gave no flattering account of those in Massachusetts in 1630: "Their houses are verie little and homely, being made with small poles pricked into the ground, and so bended and fastned at the tops, and on the sides they are matted with boughs and covered on the roof with sedge and old mats." *Higgeson*, 1:123

This is quite different from the account in *New England Prospect*, which follows:

Their employments be many: First their building of houses, whose frames are formed like our garden-arbours, something more round, very strong and handsome, covered with close-wrought mats of their owne weaveing, which deny entrance to any drop of raine, though it come both fierce and long, neither can the piercing North winde, finde a crannie, through which he can conveigh his cooling breath, they be warmer than our *English* houses; at the top is a square hole for the smoakes evacuation, which in rainy weather is covered with a pluver: these bee such smoakie dwellings, that when there is good fires, they are not able to stand upright, but lie all along under the smoake, never using any stooles or chaires, it being as rare to see an Indian sit on a stoole at home, as it is strange to see an *English* man sit on his heels abroad. Their houses are smaller in the Summer, when their families be dispersed, by reason of heate and occasions. In Winter they make some fiftie or three-score foote long, fortie or fiftie men being inmates under one rooffe. *Wood*, ch.19

This clearly shows that the long house was not confined to the Iroquois family, as some have supposed. The covering with mats, instead of bark, may be noted. This was from the comparative scarcity of large timber near the sea coast. The above description

may be applied to the houses on Long Island, where the same conditions existed, and where the Indians were in subjection to those of New England. Mr Silas Wood said:

At the time of the first settlement of Long-Island, it appears that the western part of it, if not the whole, was in a great measure bare of timber. The Indians here, as everywhere else where they were settled, annually burnt over the woods in order to clear the land, to provide food for the deer and other game. There are numerous facts to prove that, at the time of the first settlement of the Island, the woods were destitute of underbrush, and that the large trees were so scarce that it was deemed necessary to take measures for their preservation. *Wood, Silas, 3*

When the Dutch attacked an Indian village northwest of Greenwich (then in New York) in 1644, it is said that the houses were in "three rows set up street fashion, each Eighty paces long." In the burning of these long houses 500 Indians perished. The long house mentioned far up the Hudson river, at the time of its discovery, was evidently outside of the Iroquois territory. It was of bark, and in it lived 40 men and 17 women, with their chief. It also contained a large store of provisions. This has been located in various places from Catskill to Albany, but always in the Mahican lands.

There is a good description of the building of a Canadian Algonquin lodge in the Relation of 1611, with a reference to the difference there of the summer and winter lodge noted in New England:

The women go to the woods, and bring away poles, and place the base around the fire in a circle, and above fork them together like a pyramid, in such a manner that they rest one against the other directly above the fire, for there is the chimney. Upon the poles they throw skins, or else mats, or pieces of bark; at the foot of the poles, under the skins, are placed the sacks. The whole place around the fire is strewn with pine leaves, in order not to feel the dampness of the ground; above the fir leaves are often thrown mats, or the skins of sea wolves, as delicate as velvet. On this they stretch themselves around the fire, having their heads upon the sacks. . . . In summer their lodges change in form: for they make them large and long, in order to have more air: so they cover them with pieces of bark or mats made with tender reeds, and which are much more thin and delicate than ours of straw, so artistically woven that when they are suspended the water rolls over them all their length without penetrating. *Relation, 1611*

This reverses the order in *New England Prospect*, where the winter house is largest. In fact, the New England writers differ much in many things. Daniel Gookin wrote of the Indians there in 1674, and described their dancing houses, such as Roger Williams saw:

These houses are of various sizes, according to their activity and abilities; some 20, some 40 feet long and broad. Some I have seen of 60 or 100 feet long, and 30 broad . . . In the greater houses they make two, three, or four fires, at a distance one from another. *Gookin*, p.150

They also had raised couches, 7 to 8 feet broad, along the sides. This account may be compared with a plan of the Iroquois long house.

Loskiel wrote late in the 18th century, and is made responsible for the common statement that the circular lodge is not Iroquois, while the long house is characteristic of that family. His words do not quite bear out the inference made. He said:

The difference in the huts of the Delawares and Iroquois consists in the form of the roofs, the former being angular, and the latter round or arched. The Delaware families prefer living separately, and their houses therefore are but small, but the Iroquois build long houses, with three or four fireplaces, for as many families, who are related and live together. *Loskiel*, 1:53

He described the building of a bark house, for which basswood was preferred. The bark was cut from 6 feet to 9 feet long and laid under stones to make it flat. The frame was of poles, strengthened by crossbeams and covered within and without with bark, sewed on with hickory cord. The roof was ridged and covered with bark. There was an opening in the side for an entrance, and one in the roof for a chimney. Sliding shutters on the sides were the windows, and the fireplace was in the center. Benches along the sides served for tables and bedsteads, and provisions were placed overhead. Champlain had windows in his figure.

As Van der Donck was conversant with both the Iroquois and Algonquins, his description of houses does not determine between these, but probably belongs to the former or both. He said:

Sometimes they build their houses about 100 feet long; but never more than 20 feet wide. When they build a house,

they place long slender saplings in the ground, having the bark stripped off, in a straight line of two rows, as far asunder as they intend the breadth of the house to be, and continue the rows as far as it is intended the length shall be. Those sapling poles are bent over toward each other in the form of an arch, and secured together, having the appearance of a garden arbor. The sapling poles are then crossed with split poles in the form of lathing, which are well fastened to the upright work. The lathings are heaviest near the ground. A space of about a foot wide is left open in the crown of the arch. For covering they use the bark of ash, chestnut, and other trees, which they pull off in pieces of about six feet long, and as broad as they can. They cover their house, laying the smooth side inwards, leaving an open space of about a foot wide in the crown, to let out the smoke. They lap the side edges and ends over each other, having regard to the shrinkage of the bark, securing the covering with withes to the lathings. . . . They have one door in the centre of the house. When the bark of the ash and chestnut trees is not loose, they have recourse to the timber trees, which grow along the brooks, the bark of which can be taken off during the whole summer season. They kindle and keep their fires in the middle of their houses, from one end to the other, and the opening in the roof lets out the smoke. From 16 to 18 families frequently dwell in one house according to its size. *A. Van der Donck*, 5:196

He adds elsewhere:

In their castles they frequently have 20 or 30 houses. We have measured their houses, and found some of them to be 180 yards long, and as narrow as before stated. In those places they crowd an astonishing number of persons, and it is surprising to see them out in open day.

There must be an error in this extravagant estimate of 540 feet. In the *Description of New Netherland* by Arnoldus Montanus, published in 1671 and evidently taken from this, it is called 180 feet instead of yards.

In 1635 the French missionaries among the Hurons compared their houses to garden arbors:

Some are covered with great pieces of ash bark, of elm, and of fir or spruce; and though those of cedar are the best, according to the most common advice and use, there is yet this inconvenience, that they are almost as susceptible to fire as matches These cabins or arbors are of different sizes; some are 2 fathoms in length, others are 10, others 20, 30 and 40; the ordinary width is about four fathoms, the height is almost the same. There are no different stories. *Relation*, 1635

In 1634, Arent Van Curler (Corlaer) visited the Mohawks and Oneidas. In the first Mohawk castle, he said:

There stood but 36 houses, in rows like streets, so that we could pass nicely. The houses are made and covered with bark of trees, and mostly are flat at the top. Some are 100, 90, or 80 paces long, and 22 and 23 feet high. There were some inside doors of hewn boards, furnished with iron hinges . . . The houses were full of corn that they lay in store, and we saw maize; yes, in some of the houses more than 300 bushels. *Wilson*, p.87

In another castle were "16 houses, 50, 60, 70 or 80 paces long, and one of 16 paces, and one of 5 paces, containing a bear to be fattened." Another had "32 houses, like the other ones. Some were 100, 90 or 80 paces long; in every house we saw four, five, or six fireplaces where cooking went on. *Wilson*, p.89

In the fourth castle, called Tenotoge, were "55 houses, some 100 and other ones more or less paces long." The height of these houses, as reported, agrees with the Huron houses of the same year. At Oneida his estimates were higher: "There are 66 houses, but much better, higher, and more finished than all the others we saw. A good many houses had wooden fronts that are painted with all sorts of beasts. There they sleep mostly on elevated boards, more than any other savages." *Wilson*, p.93

In the Greenhalgh journal of 1677 large Seneca houses are mentioned. Tiotohatton contained "about 120 houses, being ye largest of all the houses wee saw, ye ordinary being 50 or 60 foot long with 12 or 13 fires in one house." This makes the fires very close.

It must be confessed that arithmetical results hardly harmonize with these statements in Greenhalgh. He estimates that there were 324 houses for 1000 Seneca warriors, an average of a little over three to a house. This would give from 12 to 15 inmates to each. The 100 Cayuga houses had 300 warriors; the 164 Onondaga cabins had 350 fighting men; not much over two to a house. The Oneida ratio was still less, or 100 houses for 200 warriors. For the 300 Mohawk braves there were about 96 houses. From these figures it is plain that the numbers in any large house imply a decrease in others, and that very many lived in cabins intended for a single family. A careful reading of some early journals shows this to have been the case. Field cabins often had but one or two tenants among the Onondagas.

John Bartram's account of the Onondaga council house in 1743 may be quoted, and his plan and elevation are reproduced in figure 9. It should be remembered that this was not a dwelling house. He was at Onondaga with Conrad Weiser and Lewis Evans, having come by way of Owego. He said:

They shew'd us where to lay our baggage, and repose ourselves during our stay with them; which was in the two end apartments of this large house. The *Indians* that came with us were placed over against us; this cabin is about 80 feet long, and 17 broad, the common passage 6 feet wide; and the apartments on each side 5 feet, raised a foot above the passage by a long sapling hewed square, and fitted with joists that go from it to the back of the house; on these joists they lay large pieces of bark, and on extraordinary occasions spread matts made of rushes, this favour we had; on these floors they set or lye down every one as he will, the apartments are divided from each other by boards or bark, 6 or 7 foot long, from the lower floor to the upper, on which they put their lumber, when they have eaten their homony, as they set in each apartment before the fire, they can put the bowel over head, having not above 5 foot to reach; they set on the floor sometimes at each end, but mostly at one; they have a shed to put their wood into in the winter, or in the summer to converse or play, that has a door to the south; all the sides and roof of the cabin is made of bark, bound fast to poles set in the ground, and bent round on the top, or set aflat, for the roof as we set our rafters; over each fireplace they leave a hole to let out the smoak, which in rainy weather, they cover with a piece of bark, and this they can easily reach with a pole to push it on one side or quite over the hole, after this model are most of their cabins built. *Bartram*, p.40

When the Rev. Samuel Kirkland was at Onondaga in 1764, he said the council house was about 80 feet long and had four fires. The Seneca council house was of the same size. In Bartram's plan the apartments would be about 5 by 7 feet, with a hight of 18 feet for the cabin. For sleeping there was sometimes a second tier, and the lodgers lay as in the berths of a ship.

In later days the long dwelling house was shortened, and it was eventually displaced by the cabin of squared logs, now giving way to modern framed houses. Mr Morgan was able to secure traditional accounts of the early houses, and of the later ones of bark. Some minor particulars of this kind the writer has had from the Onondagas.

The bark house is called *ka-no'-sa* by the Onondagas, *gä-no'-sote* by the Senecas. The Onondaga word for council house is *a-hus-hah-tuk'-wah*. A single house, according to Mr Morgan, was about 20 by 15 feet square, and of the same height. The frame was of five upright poles at the sides and four at each end. In his plan these were simply forked at the top, not bent over as in early days. Cross poles in these forks made a plate to which the rafters and poles were firmly attached, strengthened by other transverse poles. This frame was shingled with broad pieces of ash or elm bark, stitched to the poles. An outer frame made these more secure. The fire was in the center, and there was a door at each end, over one of which the clan totem was cut. The platform within was 2 feet from the ground, and there was another 5 feet above. Various articles were kept overhead. This varies much from earlier accounts, but modes of life had changed. Figures are given of the bark house from several sources.

To the above may be added something from Charlevoix, though his statements are usually second hand:

When the floor happens not to be large enough for bedding for all the persons in the family, the young folks have their beds on a kind of loft, five or six feet from the ground, and which runs the whole length of the cabin; the household furniture and provisions are placed above that on shelves laid crossways next the roof. There is commonly before the entry, a sort of vestibule or lobby where the youth sleep in summer-time, and which serves as a repository for wood in the winter. The doors are only so many pieces of bark, suspended from the top like the ports of a ship . . . Every village has a pretty large square, but these are seldom regular. Formerly the Iroquois built their cabins in a better manner than the other nations, and even than themselves do at this day; these were adorned with figures in relief, but of very coarse workmanship; and as almost all their towns have been since burned in different expeditions, they have not taken the trouble to rebuild them with their former magnificence. *Charlevoix, 2:127-28*

Figure 14 shows Morgan's idea of a modern Seneca bark house of a small size, with a kind of double frame, small poles being placed outside to retain the bark in place. It has not the rounded roof, almost flat above, of the early Iroquois. Figure 18 from Colonel

Romer's map of 1700 shows both kinds of roof, but this may be a fancy of the draftsman. Figure 16 is Morgan's picture of an Iroquois long house with five fires. This has also the modern roof and not the early one. Figure 19 is from a map attached to a petition of the Schoharie Indians, regarding some land stolen from them in 1734. The petition was addressed to the governor of the province of New York. The wigwam has an angular roof, an opening for smoke, and two doors in the side, another modern feature, but Cammerhoff said, in 1750, that the Cayuga cabins had "small entrance buildings on both sides." He may have meant ends. Figure 15 is from Morgan's plan of the interior of a bark house, showing the berths.

Mr Herbert M. Lloyd, in editing the new edition of the *League of the Iroquois*, adds some valuable notes on the long house, with a translation of Lafitau's description of one, perhaps the fullest in detail ever published. Like all progressive observers, Mr Morgan was not always consistent with himself, and Mr Lloyd judiciously points out the reasons for this, ending with a new plan founded on Lafitau's description. This makes the apartments longer, gives a wider space in the center, and has storerooms for barrels, as well as bunks for children. It is the most satisfactory plan yet published, but the essential differences are in the greater width of the building and the larger rooms on each side.

Lafitau's account may be summarized here. The cabins were from 30 feet to 36 feet wide and high in proportion, having vaulted roofs. A cabin with a single fire was from 30 feet to 40 feet long, adding 20 feet to 25 feet for each additional fire. The rounded roof was made of poles fastened to the square frame below. Along each side was a low platform, and above this another about 13 feet long, 5 or 6 feet wide, and as many high. These spaces were inclosed on all sides but one and served as beds. The bark shelves above served for storage, and at intervals below were places for large chests of corn. A vestibule at each end served for storage or sleeping, and the doors of these were doubled in winter to keep out the cold. There was an outside frame to protect the bark. Mr Lloyd says: "The roof of the main house was usually a round arch, but

sometimes made with straight rafters like our own. In either form it was probably too steep for a resting-place, but onto the flatter roof of the vestibule people climbed to see the sights." *Morgan*, 2:299

Those familiar with Catlin's pictures of Mandan lodges will remember the Indians seated on them, and the curve of the roof differs little from that of the Iroquois lodge. In the latter the outer framework not only aided in climbing, but afforded a secure foothold when once on the roof. So we find this a favorite spot. When Chaumonot entered Onondaga in 1655 he found the roofs covered with children. At Le Moyne's entrance in 1661 the town was scarcely visible, "the pickets, the cabins and the trees were so covered with people." When Bartram was at Tueyahdassoo in 1743, "all the *Indians*, men, women and children came to gaze at us and our horses, the little boys and girls climbed on the roofs of their cabins, about 10 in number, to enjoy a fuller view." *Bartram*, p.40

A severer test came at other times. At the dream feast at Onondaga in 1656, Garakontie's brother, it is said, "in the sequel mounts upon the roof, he makes a thousand turns there, crying as though all had been lost. This done he descends, going gravely through all the town." *Relation*, 1656

Indoors the Hurons played the game of the bowl, village against village. "All this company crowds into one cabin, and arranges itself on the one side and the other upon poles raised even to the top." *Relation*, 1636

Among the Hurons torture took place in the great war captain's cabin.

So it is called *Otinontsiskiaj ondaon*, that is to say, the house of the heads cut off. It is there where all the councils of war are held: for the cabin where the affairs of the country are considered, and which regards the polity only, is called *Endionrra ondaon*, the council house . . . The old men placed themselves above, as upon a sort of scaffolds which run above on both sides the whole length of the cabins; the young people were below, but so much crowded that they were almost one upon another, so that there was scarcely passage there along the fires. *Relation*, 1637

Figure 23 is a section of the typical early Iroquois cabin. *aa*: Side posts in rows and arched over at the top, united at *b*, where they are naturally thinner. With rare exceptions eastern aboriginal roofs had this curve, being nearly flat above. The huts of travel were different. *cc*: Posts each side of the passageway, usually carried to the roof. At intersections all were bound together. *dd*: The first floor of joists and bark for sitting or sleeping. The hearths were in the midst of the ground floor. *ee*: The second shelf, used for children when needed and for sitting or storing at other times. This is the *endicha* or *andichon* of the Mohawks and Hurons, meaning an elevated place. In playing a Huron game we are told:

Each party ranges itself one or the other side of the cabin, filling it from top to bottom, under and above the andichons, which are of bark and made like a bed canopy or roof, corresponding to that below fastened to the ground, on which they sleep at night. They place themselves on the poles that lie and are suspended along the length of the cabin. *Relation*, 1639

Upper shelf reached by a ladder, useful for spectators and storage, marked *f*. This shelf or any other is called *wen-ne-sa'-ka* by the Onondagas. The frame was covered with bark and the door usually hung from above.

Morgan's communal theory of the Iroquois house was carried too far. Greenhalgh mentioned the long house, but gave an average of two or three warriors to a cabin. Probably half had not more than one. The houses of chiefs were usually larger than the rest, as hospitality was one of their official duties. When Cammerhoff came to Onondaga in 1750, he said, "At last we reached the house of Ganassateco. There is a large pole before it with an English flag on it. The house is very large and roomy, and well built." A large room was given them. This was not the council house. At Geneseo, he said, "The old chief came to us and wanted to converse. He said that his house was the largest in the town, and the meeting place for the council."

When Father Le Moyne first visited Onondaga in 1654, he lodged in the cabin "of the first captain of the country," a spacious building. Next year Chaumonot spoke of this chief's house as "a great cabin

which had been prepared for us." Similar notes follow. Mr Morgan's conclusion therefore is hardly sound, that "Indian chiefs were housed with the people, and no better than the poorest of them." The distinctions between the rich and poor Iroquois were great. Land was not held altogether in common, and food was quite as much property as anything else. Even hunting and fishing privileges were regulated. The writer has elsewhere pointed out some of the weak points of this distinguished ethnologist's arguments, but the building feature alone is in line with the purpose of this paper.

Nearly all early accounts of permanent circular lodges represent them as round-topped. Figure 26 is from one of Champlain's plates. Figure 25 shows the frame of a similar lodge. Poles were placed in a circle, the tops bent over and bound together, and on these bark was laid or mats were spread.

At first Iroquois villages were removed every 10 or 15 years, but more rarely afterward. In the first half of the 17th century the Onondagas occupied five different sites, but remained on Indian hill, Pompey, at least 30 years. In 1681 they left that spot and went to Butternut creek. Writing from Onondaga, Aug. 25, 1682, Father Jean de Lamberville said:

On my arrival here I found the Iroquois of this village occupied in transporting their corn, their effects and their cabins to a place 2 leagues distant from their former residence, where they had dwelt for 19 years. They make this change in order to have there their firewood in convenient proximity, and to secure fields more fertile than those that were abandoned. This is not done without difficulty . . . A single family will hire sometimes 80 or 100 persons; and these are in turn obliged to render the same service for those who may require it from them. *Relation*, 1683

The Onondagas were 10 years longer than this at Indian hill, but the so called castle, a mile west, probably represented the shorter term, and the Christian Indians seem to have congregated there. The transportation of cabins 6 miles is the point to which attention is now directed. This seems to refer merely to those parts on which much work had been expended, like the carved or painted fronts. Bark and frames were had on the new site.

The Minquas of the Dutch were called Andastoes by the Hurons, and Andastoguez by the Iroquois, the latter name probably referring to their style of building. On the map of Creuxius they appear as "*Andastoeii, seu perticarum.*" Mr J. G. Shea defines the name as *cabin poles*. The Mohawk word, *gannasta*, is poles for making a cabin. He sustains this by quoting an early Huron vocabulary, where *andasta* is "perche à faire la voûte de la cabane," i. e., pole to make the roof of a cabin. It probably referred to a variation from Huron and Iroquois architecture. *Andastogue* survives as *Conestoga*.

From the long house came the name by which the Iroquois called their confederacy. It would be aside from the present purpose to discuss their other names, their origin and meaning, often curiously misconceived, but this one belongs to the question of habitation, and is illustrated by it.

From the Onondagas the writer had for this the name *Ka-no-se-o'-ne*, often written *Konosioni*, a house made of several houses or families put together; or more simply, *ka-no'-sa*, house; *onwe*, real or original; in both cases referring to the kind of house formerly used. Symbolically this house extended from the Schoharie to the Genesee valley, inclusive, the Mohawks being the east door, the Senecas the west, the council fire burning in the center at Onondaga. It was a long house indeed, with its five family fires.

The Relation of 1654 said that "the Iroquois had always called themselves *Hotinnonchiendi*, that is to say, the finished cabin, as if they were only one family." In that of 1660, the French had heard "that the next year will be more formidable than the preceding, because all the cabin—it is thus they speak to express the five Iroquois nations," were to unite in the war. In commenting on a French letter in 1694, the Rev. Mr Delliuss said "*Honontonchionni* I think do's signify as much as *Konossioni*, which is the whole house, or all the Indians together." A little earlier Father Bruyas gave *hotinnonsioni* as the Mohawk word for makers of cabins, and *gannonses* for a long house in the ordinary sense. A note to Montcalm's letter of Ap. 24, 1757, says that the Iroquois "compose only one single house, which is called the Iroquois Cabin, or the Grand Village."

In his curious history David Cusick gave the name as *Goo-neaseah-ne*, i. e. a long house. Charlevoix called the Iroquois *Agonnon-sionni*, or cabin-makers. The Moravian writers persistently defined *Acquanushioony* as confederates or covenant people, and De Schweinitz fell into a curious error on this point. He said:

Aquanoschioni was one of their original names, and Hodenosaunee, or "People of the Long House," another. It has been maintained that Aquanoschioni is a corruption of Hodenosaunee, and that they did not themselves make use of it. But the latter assertion is disproved by facts. In all the many negotiations which Zeisberger carried on with their Grand Council they invariably employed the name Aquanoschioni when speaking of themselves, as his journals abundantly show. Lafitau and Charlevoix, two Jesuit missionaries, translate it "House-Makers." *De Schweinitz*, p.32

The names are one, and the differences those of dialect. Mr Horatio Hale alone said of this word: "The people of the confederacy were known as *Rotinonsionni*, 'They of the extended house.' In the Seneca dialect this was altered and abridged, to *Hotinonsoñni*, the ñ having the French nasal sound. This word is written by Mr Morgan, *Hodenosaunee*." *Hale*, p.76

Mr Morgan's name and definition have a wide use, though varying from earlier authorities. He said:

After the formation of the League, the Iroquois called themselves the *Ho-de-no-sau-nee*, which signifies "the people of the long house." It grew out of the circumstance that they likened their confederacy to a long house, having partitions and separate fires, after their ancient method of building houses, within which the several nations were sheltered under a common roof. Among themselves they never had any other name. *Morgan*, 1:48

For building or repairing these bark houses, bark was taken from the trees at the best time, and kept in water till needed. The pieces were thus preserved from warping and cracking. Butternut creek, near the Onondaga fort of 1696, had its name from this, *ka-soon'-tah* meaning bark, or more largely, bark in the water. For a temporary shelter bark was commonly used. John Bartram gives an account of this in describing his Onondaga journey in 1743:

They cut the tree round through the bark near the root, and make the like incision above 7 feet above it, these horizontal ones are joined by a perpendicular cut, on each side of which they after

loosen the bark from the wood, and hewing a pole at the small end, gradually tapering like a wedge about 2 feet, they force it in till they have completed the separation all round, and the bark parts whole from the tree, one of which, a foot diameter, yields a piece 7 feet long and above 3 wide: And having now prepared four forked sticks, they are set into the ground, the longer in front; on these they lay the cross-poles, and on them the bark. This makes a good tight shelter in warm weather. *Bartram*, p.20

Father Bruyas mentioned the andichon twice. Brébeuf described it in the house built for him and his friends in the Huron country, in 1635. "At the two sides, according to the Huron fashion, are two benches, which they name *endicha*, upon which are the chests to put our clothes in, and other little commodities." These suggest the berths so often described, and which were continued in the log cabins. Thus in Dr Jabez Campfield's account of Seneca houses in 1779, he said: "Most of their houses have a small additional place, built at one end, from which, they have a dore into ye large house—they build two tier of births one above the other, on both sides, and have fire in ye centre." *Conover*, p.60

Bishop Cammerhoff mentioned these outside apartments, when at Cayuga in 1750. "There are about 20 huts all together, most of them large and roomy, with 3 or 4 fireplaces; they are well built and water proof. I have not seen as good huts anywhere else. They have small entrance buildings on both sides, and four or five families can lodge in every cabin." It was the first village he had seen in the early Iroquois country. A little later he was in the Seneca town of Ganataqueh (Canandaigua). "The huts were ornamented with red paintings of deer, turtles, bears, etc., designating to what clan the inmates belonged." *Cammerhoff*

This feature has been mentioned before at Oneida, and was common among the Iroquois, pointing out to visitors their kindred clans, on which they had a direct claim. In the French account of Iroquois customs in 1666, we are told that war councils are held in the cabin of a war chief, and others in that of a principal chief. "Each tribe has in the gable end of its cabin, the animal of the tribe painted; some in black, others in red. When they assemble together for consultation, the first Division ranges itself on one side

of the fire in a cabin; and the other Division places itself on the other side." *O'Callaghan*, 1:4

Van der Donck refers to something different, and perhaps Algonquin:

We have seen some counterfeit representations of trumpets in their strong houses or castles, wherein they hold their council assemblies, but their paintings are not spirited and ingenious. They also paint their shields, and war hammers or clubs, and in their houses on the rail-work, they paint representations of canoes and animals, which are not well done. *Van der Donck*, 5:164

If this writer had indeed been in Mohawk towns and seen their long houses, it is curious that he should have passed over so plain and common a feature in speaking of house paintings.

Heckewelder seems to refer to the painting of these house totems as a general custom:

The Indians, in their hours of leisure, paint their different marks or badges on the doors of their respective houses, that those who pass by may know to which tribe the inhabitants belong. Those marks also serve them for signatures to treaties and other documents. *Heckewelder*, p.254

One superstitious custom, connected with cabins, seems to have been quite general. It was not so singular as one of the Canadian Algonquins, of a kindred nature. When an inmate died among these, they lifted the bark above the spot, that the soul might pass out of the cabin, but some thought it found its way through the chimney or other opening above. Sometimes they hastened it by beating on the cabin with sticks. This was called *gannitenton* by the early Mohawks. In 1655 an Erie girl was killed at Onondaga:

Towards evening the murderer, or some one else, had it cried aloud through the streets and by the cabins that such a person had been put to death. Then every one began to make a noise with his feet and hands; some, with sticks, struck upon the barks of the cabins to frighten the soul of the deceased, and to drive it far away. *Relation*, 1656

Wentworth Greenhalgh saw a similar scene at the Seneca town of Tiotohatton in 1677. Several prisoners had been put to death. "Att night we heard a great noyse as if y^e houses had all fallen, butt itt was onely ye Inhabitants driving away y^e ghosts of y^e murthered." *O'Callaghan*, 1:13

This beating of cabins served other purposes. Among the Hurons, in 1637, there was a deadly pestilence, from which the host of the French desired to be free. After a sacrifice of tobacco at night, there followed "a hubbub and charivari, which was made by all in the cabin for a quarter of an hour. They struck so rudely against the barks that it was impossible to hear each other. This was to make the pestilence afraid." The same custom was found in Illinois, and it was probably a general one.

Forts

In times of peace towns were often defenseless. When war came, the wooden walls were repaired or new ones made, strong enough for aboriginal warfare but not always safe against the white man's arms. That earthworks were often picketed is now definitely known, and some principles of their construction are understood, enough to call forth admiration.

The earliest fort in this region of which we have any contemporaneous description was that visited by Jacques Cartier in 1535. There is little cause to doubt that this was occupied by the early Mohawks, though on the site of Montreal. The following brief account is part of Hakluyt's translation, quoted by Sir J. W. Dawson:

The citie of Hochelaga is round, compassed about with timber, with three course of Rampires, one within another framed like a sharp spire, or pyramid, but laid acrosse above. The middle-most of them is perpendicular. The Rampires are framed and fashioned with pieces of timber, layd along very well and cunningly joyned together after their fashion. This inclosure is in height about two rods. It hath but one gate or entrie thereat, which is shut with piles, stakes, and barres. Over it, and also in many places of the wall, there is a kind of gallerie to run along, and ladders to get up, all full of stones and pebbles for the defence of it. *Dawson, p.30*

This is the key to the construction of most of the New York palisades. As the gallery was not continuous in this case, Mr Dawson has represented the sections as watchtowers in his ideal view of Hochelaga. They were probably open above. The section of this wall from Ramusio gives only a general idea and one hardly correct. That has two sections of boards like the sloping walls of an A tent, with central poles properly braced. Toward the top

of one slope is a shelf, intended to show the gallery. The real requirements are a line of upright posts, sufficiently far apart to admit the sloping timbers between them at the top. The writer found, in examining one stockaded site a space of 30 inches from center to center of the post holes. If the upright posts in these were each a foot thick there would remain 18 inches for the two intervening and sloping ones, or 9 inches for each. If all were of the same size, they might average 10 inches at the base. Figure 13 will show the middle, perpendicular post, mentioned by Cartier, with the others like a sharp pyramid, laid across above. The gallery can not be so easily shown, but its principle will be readily understood. By the intersection of the three and probable projection of part or the whole, angles were formed above, ready for the reception of riders, running lengthwise of the wall. At the beginning the upright and sloping poles were firmly bound together; the new addition was securely bound to all, adding greatly to the strength of the wall. A line of saplings on either side of the central post would suffice for this. The forest warrior did not stop here. While binding these together and looking on the ground below, he became conscious of the advantage of his position. By binding a few more poles to the projecting posts and securing bark to them, he could have a battlement well worth having. Figure 10 shows a section of one thus made. Accustomed to close encounters, where simple missiles were of use, he might gather stones suitable for casting down on any foe, as he did, for men have used these in every age and clime. The ladders were rude. A notched pole, or one with a few projections, would be all that sailor or Indian would require. Figure 11 is a view, showing the battlements, pickets and the breast-work below.

It will be observed that for a triple stockade of this kind, but one line of post holes was required. The cross poles needed none, and for some stockades no holes at all were used. Passing from Hochelaga, we may consider Van der Donck's account of early fort building in New York:

First they lay along on the ground large logs of wood, and frequently smaller logs upon the lower logs, which serve for the foundation of the work. Then they place strong oak palisades in the

ground on both sides of the foundation, the upper ends of which cross each other and are joined together. In the upper crossing of the palisades they then place the bodies of trees, which makes the work strong and firm. *Van der Donck*, 5:197

This made a double stockade and required no deep holes. Figure 12 shows a section of this form. A shallow trench, or anything to hold the base of the pickets temporarily in position, was all that was needed. The Iroquois favored the double or triple stockade as a rule; but, when they had the white man's tools, it became easier to make a single stockade, as they could then use larger posts and dig deeper holes. So Greenhalgh found some Mohawk towns thus defended in 1677. In 1634 Van Curler mentioned but one stockade among them, that of Tenotoge, the fourth castle or town. Of this he said:

This castle has been surrounded by three rows of palisades, but I did not see anything peculiar about them, but that six or seven pieces were so thick that it was quite a wonder that savages should be able to do that. *Wilson*, p.90

He gave however a good account of the Oneida castle as it appeared that year. He came westward from the lower Mohawk river to that town and said:

We marched boldly to the castle, where the savages opened to let us pass, and so we marched through them by the gate, which was $3\frac{1}{2}$ feet wide, and at the top were standing three big wooden images, of cut wood, like men, and with them I saw three scalps fluttering in the wind, that they had taken from their foes as a token of the truth of their victory. This castle has two gates, one on the east and one on the west side. On the east side a lock of hair [scalp] was also hanging; but this gate was $1\frac{1}{2}$ feet smaller than the other one. . . This castle is situated on a very high hill, and was surrounded with two rows of palisades. It was 767 paces in circumference. *Wilson*, p.93

The most interesting of all the Iroquois forts was the one attacked by Champlain in 1615, and of which he spoke highly, saying it was stronger and better built than those of the Hurons, from which it differed. It was not naturally defended, being on a broad stretch of low land among the hills, and extending into a shallow pond, where holes could not be dug. Perhaps from its accessible position, unusual pains had been taken to strengthen it.

Their village was enclosed with strong quadruple palisades of large timber, thirty feet high, interlocked the one with the other, with an interval of not more than half a foot between them; with galleries in the form of parapets, defended with double pieces of timber, proof against our Arquebuses, and on one side they had a pond with a never failing supply of water, from which proceeded a number of gutters which they had laid along the intermediate space, throwing the water without, and rendered it effectual inside, for the purpose of extinguishing fire. Such was their mode of fortification and defence, which was much stronger than the villages of the Attigouatans [Hurons] and others. *O'Callaghan*, 3:14

Most persons are familiar with the picture of this fort, and it is a good specimen of the vagaries of art. The houses are regularly arranged, and, if long and high, are out of proportion to the size of the fort. That the French and Indians could almost step over the farther walls is of no great consequence, but the palisades can hardly be said to interlock, or to have "an interval of not more than half a foot between them." The parapets are well finished specimens of mechanical art, and the ladders as regular as the steps of a palace. The truth seems to be that this quadruple palisade was made on the plan of the double, the two inner and two outer lines giving it a broader foundation below, and a broader parapet above. It needed no post holes, and the unplowed site shows traces of none. Extending into the shallow pond, the water could not be cut off, and the land afforded a proper grade for the gutters. The fanciful wall of the picture may be dismissed, and for it should be substituted four lines of pickets, crossing above, instead of two or three. That it was ingenious is true, fulfilling every requirement of primitive warfare, but those who built it simply carried their usage a step beyond what others had done.

No account of early forts would be complete without a quotation from the quaint history of David Cusick. He said:

The five families were compelled to make fortifications throughout their respective towns, in order to secure themselves from the devouring monsters. The manner of making the fort: at first they set fire against several trees as requires to make a fort, and the stone axes are used to rub off the coals, as to burn quicker: when the tree burns down they put fires to it about three paces apart and burns it down in half a day; the logs are collected to a place

where they set up round according to the bigness of the fort, and the earth is heaped on both sides. A fort has generally two gates; one for passage, and the other to obtain water. *Beauchamp*, p.14

Three paces is a very moderate hight for a picket intended to be set in the ground. As for the mode, charring and rubbing could be carried on rapidly, and was light work. Changes came with the white man's tools and hints. The single line of thick posts, set close together, grew in favor. The French showed the use of the bastion; the English built forts and blockhouses for the Indians.

Two sketches of early New York forts are given from Van der Donck's map. Fig. 20 shows one of the Mahicans, which is angular and with projecting lines of defense on each side. The other is a circular Minisink fort, drawn in at the gateway, which was a frequent feature. Figure 17 represents this. Both have single open lines of pickets, and the houses are of the usual round-topped style. The arrangement of the pickets differs from his description, and the plan of the forts seems all that is intended. The pickets would not hide the defenders.

There was a change even when the Indians for a time made their own forts. In the Indian war of 1643 the Wetquescheck forts are described as "of plank five inches thick, nine feet high, and braced round with thick plank studded with port holes."

In the *Journal of the second Esopus war*, 1663, there are accounts of two forts built by the River Indians. A squaw described one:

The fort is defended by three rows of palisades and the houses in the fort encircled by thick cleft palisades with port holes in them, and covered with bark of trees; says that the fort is quadrangular but that the Angles are constructed between the first and second rows of palisades and that the third row of palisades stands full eight feet off from the others towards the interior, between the two first rows of palisades and the houses. *O'Callaghan*, 4:49

This was of a mixed character and abandoned, and another found in process of construction was thus described:

The fort was a perfect square with one row of palisades set all round being about fifteen feet above, and three feet under ground. They had already completed two angles of stout palisades, all of them almost as thick as a man's body, having two rows of portholes,

one above the other; and they were busy at the third angle. These angles were constructed so solid and strong as not to be excelled by Christians. *O'Callaghan*, 4:73

A Mohawk fort of 1665 is described as "a triple palisade, surrounding their stronghold, twenty feet in height, and flanked by four bastions." It had "prodigious quantities of provisions," and an abundant supply of water in bark tanks.

The French said that the triple palisade of the Onondagas, burned in August 1696, was built by the English; but there is no documentary evidence of this. It is thus described:

It was an oblong, flanked by four regular bastions. The two rows of stockades that touched each other, were of the thickness of an ordinary mast, and outside, at a distance of six feet, stood another row of much smaller dimensions, but between 40 and 50 feet in height. *O'Callaghan*, Col. Doc. 9:653

Beside the mission fort of 1656 at Onondaga lake, the French unsuccessfully tried to build a blockhouse at Onondaga in 1711. At the same time Fort Hunter, with its chapel and blockhouses, was built for the Mohawks, and similar buildings were contracted for among the Onondagas. All these were to be garrisoned by white men. In 1756 Sir William Johnson formed a different plan; that of building forts and blockhouses to be used by Indians, and this was partly carried out. Figure 21 is the plan preserved of the one built for the Schoharie Indians, and the others scarcely differed from this. The directions for the one at Onondaga may be read with this in hand, and part of these follow:

Fort is to be one hundred & fifty feet square, the Logs to be either Pine or Oak sixteen feet long, four feet of which to be set in the ground well rammed and pounded t[w]o sides of each Log to be square so as they may stand close to each other proper Loop holes to be cut at four feet distance the height from the Ground to be left to the Indians, two good Block Houses to be built at either Gate of the opposite Corners each Block House to be 24 feet square below the upper part above the beams to project a foot so as men may fire down upon the enemy. You are to floor the Block Houses Shingle the Roofs & build a good sentry Box on the top of each house & two strong gates of oak Plank of three Inches thick to be set up in the properest places with strong Iron Hinges. *O'Callaghan*, Col. Doc. 7:101

As the site of this fort is well known, and as the writer has elsewhere recovered points of pickets from 260 to 300 years old, much less deeply set, there is reason to suppose that the bases of these posts still remain where they were placed. The forts of that year were the last built for Indian use in New York.

A supposed feature of some forts may be mentioned. Dawson places round towers along the ramparts in his picture of Hochelaga, but they are not mentioned in the text unless inferentially. Similarly Parkman speaks of the wooden watchtowers surmounting the walls of a Huron town in 1646. The original may perhaps imply this. It reads:

The young men were the night guard, mounting to the top of the sentry boxes, and singing war songs with a voice so terrible that the fields and neighboring woods bore these afar off. There could be no doubt that they were prepared to fight. Yet some Iroquois adventurers, notwithstanding these cries, secretly made their approach, making a resolute stroke. Seeing that sleep had silenced the sentinels, one of them climbed the tower like a squirrel, where he found two men asleep. He split the head of one, throwing the second below, where his companions scalped him, making off so fast that the Hurons could do nothing. *Relation*, 1646

Burial

Life and death are very close neighbors, and the care of the dead was an important affair with our aboriginal predecessors. Burial was not always the same, and but one or two features of this will now be described. For this statement we have both the results of excavations and the testimony of the Indians themselves. After relating his story of the vampire, quaint David Cusick said:

This important event was soon made known among the five nations, and afterwards changed their mode of burying, by sitting posture face to the east; but again they were troubled with the dead bodies, and were compelled to make some alterations in burying. *Beauchamp*, p.30

A passage from J. V. H. Clark may be quoted, though the writer knows of not a single fact in its favor in New York. In Canada it was a common practice with the Hurons and other relatives of the Iroquois. Mr Clark said:

The most ancient mode of burial by the Iroquois, says La Fort, was first to place the corpse upon a scaffold some 8 feet high,

made by setting crotches and laying poles across, attached or near to one corner of the cabin of the nearest friend of the deceased. There the body was left exposed till the flesh had completely fallen off. After this, the skeleton was buried, placing the bones of the feet first, crowning the pile with the skull. *Clark, 1:51*

Morgan's testimony is quite as explicit that the same mode anciently prevailed among them, but it is probably a reminiscence of the time when they were one with the Hurons:

The body of the deceased was exposed upon a bark scaffolding, erected upon poles, or secured upon the limbs of trees, where it was left to waste to a skeleton. After this had been effected . . . the bones were removed, either to the former house of the deceased, or to a small bark house by its side, prepared for their reception. In this manner the skeletons of the whole family were preserved from generation to generation. *Morgan, 1:166*

He represents them as afterward gathered and buried in the Huron way. This may have come from tales of Huron captives, but a footnote is stronger still: "There are Senecas now residing at Tonawanda and Cattaraugus, who remember having seen about 60 years ago, at the latter place, these bark scaffoldings on which bodies were placed."

The Senecas were affected by western customs and had seen such things, but that they had seen them in New York thus recently is improbable. The Jesuit Relations, early travelers, the Moravians, Sullivan's soldiers, all described graves and burial, but with no allusions to scaffolds here. Occasional ossuaries suggest the Huron customs, but they were early and few. Separate and permanent burial seems the Iroquois rule. De Vries described a secondary burial among the northern Indians, resembling the Huron dead feast, but gave no time or place. The Nanticokes also removed the bones of their friends here after they came to New York, but this is exceptional. Colden was told of the cremation of a corpse at Oswego, that some western Indians might carry the bones home.

Arent Van Curler's account of some Oneida graves in 1634 is the oldest that we have of those among the Iroquois. The travelers came toward the town from the east:

Before we reached the castle, we saw three graves, just like our graves in length and height; usually their graves are round. These

graves were surrounded with palisades that they had split from trees, and they were closed up so nicely that it was a wonder to see. They were painted with red, and white, and black paint; but the chief's grave had an entrance, and at the top of that was a big wooden bird, and all around were painted dogs, and deer, and snakes, and other beasts. *Wilson*, p.92

In the curious account of the Iroquois written in 1666, which ignores scaffold sepulture, we have the particulars of some more common tombs, where wood was used:

As regards the dead, they inter them with all they have. When it is a man they paint red calumets, calumets of peace on the Tomb; some times they plant a stake on which they paint how often he has been in battle; how many prisoners he has taken; the post ordinarily is only four or five feet high and much embellished. *O'Callaghan*, 1:8

On a small scale this was like that which gave its name to Painted Post. Other writers add some things to this regarding the emblems displayed. Colden describes the grave as a large round hole, in which the body is placed upright or sitting; "it is covered with timber, to support the earth which they lay over, and thereby keep the body from being pressed; they then raise the earth in a round hill over it." An earlier writer may be cited whose account is more general: "They place as much wood around the body as will keep the earth from it. Above the grave they place a large pile of wood, stones, or earth, and around and above the same they place palisades resembling a small dwelling." *Van der Donck*, 5:201

The accounts of Megapolensis, De Vries and others differ but little.

When some Frenchmen died at Onondaga lake in 1656, and the Onondagas came to bewail their death, a chief said to their friends: "This present is to level the earth in which I have put them, and this other to erect a palisade around their tombs, in order that the beasts and birds of prey may not disturb their repose." *Relation*, 1657

Mention has been made of three notable Oneida tombs. Father Bruyas speaks of another built there in 1672. Because of a dream, the body of a noted juggler was taken up and carried "over the

road of Gandastogue', where they have erected the most beautiful mausoleum which is seen among these barbarians." What it was like may be inferred from the following account of others, written by one of Sullivan's men in the campaign of 1779. Lieutenant Beatty said some of the graves at Kendaia were very curious:

One in particular which I believe was some Chief or great man & was buried in this manner; the body was laid on the surface of the earth in a Shroud or Garment, then a large Casement made very neat with bords something larger than the body & about 4 foot high put over the body as it lay on the earth and the outside & top was painted very curiously with great many Coulours, in each end of the Casement was a small hole where the friends of the Deceased or any body might see the corps when they pleased, then over all was built a large shed of bark so as to prevent the rain from coming on the Vault. *Conover, p.29*

Another officer described these as "three grand tombs, where it is supposed they buried some of their chiefs, they were all painted very fine, and covered with a frame and bark, on the top of the whole."

The surface burial of one of these chiefs is quite different from the scaffold sepulture of the Hurons and is the only one recorded in New York. A brief extract will show the Huron mode:

Those who have the care of the funeral prepare the litter where the dead is laid upon a mat and wrapped in a beaver robe, and then they lift it up and bear it by four corners; all the village following in silence as far as the cemetery. There is there a tomb made of bark, and set up on four posts of about eight or ten feet high. While they adjust the dead there and arrange the barks, the Captain publishes the presents. *Relation, 1636*

Of course the white man's customs affected the Indian, and in none more than in burial. The protecting coffin appealed to his feelings. He made one himself of bark or of split and hollowed logs, but, if one still better was made for him, greatly was he pleased. There is something pathetic in the great Garakontie's request, related by Father de Lamberville at Onondaga, that he "would make him a coffin of 4 planks, which he immediately provided." A sad task his friend had afterward: "After putting him in the coffin, which I had caused to be made to the best of my ability, we

lowered him into the grave without any of his relatives touching him, except to hold back the earth with pieces of bark, lest it might fall upon the coffin." *Relation*, 1680

Zeisberger and Frey had a similar request at Onondaga in August 1753. A prominent woman had died, and the chief Otschinachiata "requested us to make a coffin for the dead woman, which we did." *Zeisberger*

These accounts of burial are not full, little notice being taken of those parts in which the use of wood does not prominently appear, and they may be concluded with Clark's description of Onondaga graves a little over a century ago:

Their graves were usually dug about 3 feet deep. Barks were cut and peeled, of the length of the grave, pieces were fitted for the bottom, sides and ends, and then placed in the grave; a single broad piece was fitted for a covering. The corpse was then brought to the grave on poles bound together for a bier. He was then lowered into his bark coffin. . . . The final covering was carefully placed over the whole, and the grave closed with earth. *Clark*, 1:51

Beside the other articles placed in graves, seeds and fruits are often found. Where there were no palisades branches were sometimes laid over them to shield them from the sun. The log coffins have been found.

Weapons

It is a natural and probable opinion that the spear and dart preceded the bow and arrow. First would come the weapon used in the hand, then its projection, then the means of throwing it yet farther. In the opinion of some the first means would be the cord attached firmly to an elastic stick and loosely to the dart, held in one hand and sprung by the other. When released the dart would be thrown to a distance, in a way familiar to most schoolboys. This is used by Indian boys in their play even now in New York. Figure 31 shows one of their darts, with a notch in one edge where the knot of the string is placed. A stick and knotted string furnish means of propulsion. The string is tied to the small end of the elastic stick, the knot is placed in the notch, the dart is drawn back by its base and suddenly released. The action is that of the bow, of which this may be called a half. There is no account or figure

of a weapon used in this way by the early New York Indians, and whether the present boyish game is a survival or one received from the whites is matter for conjecture.

The old javelin games of the Iroquois have almost disappeared; but one often yet sees Indian boys throwing their light sumac darts to see which will go farthest, using them with or without the stick and string. A light flat dart is used with these. For merely throwing it is but a cylindric stick, adorned with gay colors, nor is it now finished with the care of earlier days, when it was used in formal games. Of these, as played by the Senecas, Mr Morgan gave full and interesting descriptions, and these will be substantially followed here.

For the two games the javelins were differently made. In that with the hoop they were 5 or 6 feet long and less than an inch thick, and made of hickory or maple with great care. One end was sharpened, and the stick was spirally striped. Figure 39 shows this and figure 40 the hoop. The ring might be either a hoop or a wheel about 8 inches in diameter, and the dart was thrown at this, being held at the end or in the center. Sometimes four of the clans played against the others, from 15 to 30 players being on each side, each player having from three to six javelins. These were forfeited by the losers to the winning side. The hoop was rolled by one party in front of the line of their opponents, who threw their javelins as it passed. If it was hit, it was set up as a target, and each man of the opposite side took the place of the lucky player and threw his dart at it. If he hit it, he saved his missile; if he missed, his opponents took it and threw it again. If they were successful, the dart was out of the game and belonged to them. Then the hoop was rolled again by the other party, and the same course was followed. The game ended when one party had lost all its weapons. Morgan speaks of touching the hoop; the Onondagas tried to thrust their darts through, as in the game of chungke. The Seneca name for this game is *gä-na'-gä-o*, and the dart is *ga-geh'-dä*. Zeisberger gives *gaheskah* as the Onondaga name, which is now that of an arrow.

The common dart is now called *ka-none-cha'-ah* by the Onondagas. Morgan says the Seneca name of this game is *gä-ga-dä-yan'-duk*. The darts are slender and but rudely worked. Those which the writer has seen used are from 3 to 5 feet long and colored with native dyes. Usually they are merely thrown high in the air, but in a game some object was selected, which it was to strike in its descent and rebound. The farthest distance gained a point, and several might be scored on one side. The second party chose the object and distance for the next trial, and so it went on till one side had the necessary points.

The Iroquois bow differs from the short bow used by the prairie Indians, intended for a short range and ready handling on horseback. Of these Mr Catlin said:

The result produced by them at the distance of a few paces is almost beyond belief, considering their length, which is not over 3, and sometimes not exceeding $2\frac{1}{2}$ feet. It can easily be seen, from what has been said, that the Indian has little use or object in throwing the arrow to any great distance. *Catlin*, i, 142

Quickness was a more important element, and to keep the air full of arrows something of which to be proud. The practice of the Mandans, he said, "enables the most expert of them to get as many as eight arrows up before the first one reaches the ground." It is well that Mr Catlin stated the size of the western bow, as his drawings are often much out of proportion. In several he has represented bows at least 5 feet long.

The New York Indian required a different bow for use in the forest. His range was also usually short—sometimes long, but he shot deliberately, from behind his shield or a tree, often at small objects like birds or squirrels, or at some vulnerable point in larger game. His bow and arrows were made accordingly. We can not depend on early pictures, but long bows are usually placed in the hands of the Indians near the Atlantic coast. The artists who illustrated Capt. John Smith's varied productions sometimes made the bow exceed a man's height, with very long arrows. Notably is this the case with a Susquehanna warrior, near in kindred to the New York Iroquois. His bow reaches above his head, and of him

Smith said, "He seemed the goodliest man that ever we beheld . . . His arrows were five-quarters of a yard long." But, while early writers speak of the excellent archery of the Indians, little is said specifically of their bows, whence it may be inferred they were much like those of Europe.

Mr Morgan said, "The Indian bow was usually from $3\frac{1}{2}$ to 4 feet in length." Of three Onondaga bows in the writer's hands, one is 5 feet long and the other two a foot shorter. All are $\frac{7}{8}$ of an inch wide. Another of elaborate and unusual character, made by an Onondaga for a friend, is wrapped with sinew in the contracted center, but has undulating edges beyond this, being nearly $1\frac{3}{4}$ inches wide. Figure 3 shows the modern Iroquois bow, and all Champlain's pictures have the bow quite long.

For 68 years the writer has known the arrow of the Onondagas and seen them shoot with it. For their own purposes they often make use of those which are without feathers, having an expanded and rather blunt wooden head, continuous with the shaft and called *ga-hes'-kah o-je-ko'-hah*. Figure 30 shows this, and it seems a survival of early days, when it was used to stun small game, as it is yet. The Onondagas say that the rustle of its fall through the trees helps them regain it. The small number of arrowheads found on Iroquois town sites of the last 300 years supports its antiquity. For home use and small game it was probably the favorite arrow. Larger stone points for larger game would naturally be used in distant hunts. Mr Morgan figured but did not describe this arrow. Figure 4, *a, b, c, d*, is from his work. That marked *c* was tipped with hollow horn and made by an Oneida in Canada. All of his figures include feathers, and on this point he said:

The arrow was about 3 feet in length, and feathered at the small end with a twist to make it revolve in its flight. . . The English and Scottish archers feathered their arrows, but without this peculiarity. Three feathers were also used by them, which were set parallel with the arrow and with each other. But they were set upon one side of the arrow at its three quarters, and in such a way that the three parallel feathers formed obtuse angles with each other. The Indian used but two feathers, which passed around the opposite sides of the arrow in a twist, as shown in the figure. For this purpose the feather was stripped off from the quill, and tied to the arrow with sinew. *Morgan, 1:296*

The two feathers are not invariable, the writer having both Onondaga and western arrows feathered with three. Figure 6 shows the spiral twist on one from Onondaga. One side of the quill is taken and partially stripped at each end. Figure 8 shows this. Figure 7 shows the mode of attachment, with one feather ready for use. Sometimes there is no twist. Figure 47 shows the tipping of the arrow with a flint point by an Onondaga. Sharp arrows are called *o-yūn-w̄y-kun'* by them. Two feet is a common length.

Mr Morgan gives the Seneca word *wā-a'-no* for bow, and *ga'-no* for arrow. In Onondaga the former is *ah-ēn'-nah*, and the latter *kah-hes'-kah*. The other Iroquois dialects vary quite as much.

Most of the Iroquois long ago abandoned the use of the quiver, but, as it was of leather it falls outside of the present general subject.

The blowgun, called *ga-ga-an'-da* by the Senecas, and *kah-sah-kēn'-tah* by the Onondagas, is rare now, though once common. Morgan described it as a wooden tube, 6 feet long and an inch thick. In the half inch bore was placed a slender dart, 2 feet long, sharp pointed, and with a ball of thistle down at the base. The dart was discharged with great accuracy by blowing below it in the tube. The gun used at Onondaga by the writer was a little shorter, but the arrow was quite short, with red flannel at the base. Figure 53 shows both arrows, *a* being loaded with down and *b* with flannel. Figure 54 shows the blowgun much reduced. John Bartram's words, when he was at Onondaga lake in 1743, suggest these arrows. He said: "Our guides took their arrows, made of reed and down, to shoot small birds." Mr Ketchum quotes Weld's account of their use by the Senecas in 1796. The arrows were pointed with triangular bits of tin, the other end being wound with thistle down for about 2 inches. The tube was about 6 feet long and the arrow short and slender.

The arrow is put into the end of the tube that is held next to the mouth; the down catches the breath, and with a smart puff they will fly to the distance of 50 yards. I have followed young Seneca Indians whilst shooting with blow-guns, for hours together, during which time I have never known them to miss their aim at the dis-

tance of 10 or 15 yards, although they shot at the little red squirrels, which are not half the size of a rat, and with such wonderful force used they to blow forth the arrows, that they frequently drove them up to the very thistle down, through the heads of the largest black squirrels. The effect of these guns appears at first sight like magic. The tube is put to the mouth, and in the twinkling of an eye you see the squirrel that it aimed at fall lifeless to the ground; no report, not the smallest sound even, is to be heard, nor is it possible to see the arrow, so quietly does it fly, until it appears fastened in the body of the animal. *Ketchum*, 2:190

The Algonquin word *tomahawk* originally belonged to the war club, called *cassetête* by the French, and, as each was intended to break the head, the change was natural. On this each nation placed its own mark, and it was often left behind to tell by whom some daring or violent deed was done. *Loskiel* said:

The Iroquois and Delawares, and the nations connected with them, do not declare war by a formal message, but rather send out a small party, seize the first man they meet, belonging to the nation they intend to engage, kill and scalp him; then cleave his head with a hatchet, which they leave in it, or lay a war-club, painted red, upon the body of the victim. *Loskiel*, 145

A Canadian Indian discovered an English army on Lake George in 1690. "He had suspended three tomahawks within sight of their cabins, indicating to them that they were discovered, and that he defied them to come to Montreal. These tomahawks are a species of club on which they carve figures and in that way manifest their wishes." *O'Callaghan*, Col. Doc., 9:479

In describing the Iroquois in 1666, it is said, "When they have finished, if they have casse-tetes or clubs, they plant them against the corpse, inclining a little towards the village of the slain." *O'Callaghan*, Col. Doc., 9:48

In the same interesting account the Wolf holds a round-headed club in his hand. Figure 55 shows another from the same with unusual features. A small projection, suggestive of a thumb, seems intended to afford a better hold at the small end. The top is squarer than usual, and would not suggest the war club but for its explicit mention. It might possibly be reversed, making the sharp projection the deadly part, but this hardly seems probable. It is said to

represent the "club which they use to break the skull when they are at war."

The late Rev. F. P. Winne, of Watertown N. Y., gave the writer an interesting account of sundry relics of King Philip, which came into the hands of the Rev. John Checkley, Mr Winne's maternal ancestor. Among these was King Philip's war club, which was in the hands of another descendant living in New Hartford N. Y., some 20 years ago. Thence it went to Maine. Mr Winne wrote:

The club I have had in my hands many times, and can describe it. It is a piece of hard wood,—hard maple, I think—about 14 inches long, shaped somewhat like this, (figure) a solid ball about 4 inches in diameter, which, with the handle, is cut out of one piece of wood. Along the handle on both sides are inserted triangular pieces of what appear to be, and I suppose are oyster shells; the dark pieces showing the number of Indians Philip had killed, and the light pieces the whites. *Winne*

John Josselyn, in 1675, said of the New England Indians, that they have "*tomahawks* which are staves two feet and a half long, with a knob at the end as round as a bowl, and as big as that we call the Jack or Mistriss." *Josselyn*, 23:309

This will suffice to show the identity and use of two noted war implements. Mr Morgan figured and described two kinds of war clubs; one of horn with an inserted blade, derived from the west and often illustrated by Catlin. The other is one of the primitive New York forms, terminated by a large knot or stone ball. These balls, of grooved or ungrooved stone, were frequent here and quite recently in use. The long grooved pebbles of Seneca lake seem to have had a different purpose. Figure 28 shows a wooden club of this kind, the large ball being of the same piece as the handle. The Onondagas call this *kah-jee'-kwah*. Sometimes a carved hand clasps the ball, but they are often quite simple. Figure 29 is an Onondaga club of this kind, belonging to the writer. It was used in dances and is black, of hard wood, and 22 inches long. David Cusick has both of Morgan's forms in his quaint pictures.

Mr Morgan did not class the spear among Iroquois weapons, nor did he think they used it. Suitable points for this are quite rare on Iroquois sites, but there are early allusions to it, possibly as an

implement derived from the whites. Father Bruyas has but one allusion to it in his Mohawk words: "*Wahannakwinniont*. He made a pike or spear enter." It was little used in war, but found an appropriate place in fishing. At a much earlier day it must have been frequent, judging from the abundance of large stone points.

A shield was part of a warrior's full equipment when he had only arrows to face, but it was soon disused when found not bullet-proof. Other defensive armor went with it. When Champlain met the Mohawks in 1609, he said: "The Iroquois were greatly astonished seeing two men killed so instantaneously, notwithstanding they were provided with arrow proof armor, woven of cotton thread and wood."

Van Curler saw a sham fight in the fourth Mohawk castle, Dec. 23, 1634, which he thought rough. "Some of them wore armor and helmets that they make themselves of thin reeds and strings so well that no arrow or ax can pass through to wound them." *Wilson*, p.91

A missionary in Lower Canada in 1633 was surprised at a shield he saw:

He bore with him a very large buckler, very long and very wide; it covered all my body easily, and went from my feet up to my chest. They raise it and cover themselves entirely with it. It was made of a single piece of very light cedar; I do not know how they can smooth so large and wide a board with their knives; it was a little bent or curved in order the better to cover the body, and in order that the strokes of arrows or of blows coming to split it should not carry away the piece, he had sewed it above and below with cord of skin: they do not carry these shields on the arm; they pass the cord which sustains them over the right shoulder, protecting the left side; and when they have aimed their blow they have only to draw back the right side to cover themselves. *Relation*, 1633

Daniel Gookin, an early New England writer, mentioned Indian shields. "Their weapons heretofore were bows and arrows, clubs and tomahawks, made of wood like a pole-axe, with a sharpened stone fastened therein; and for defence, they had targets, made of barks of trees." *Gookin*, 1:152

In New York, Van der Donck said, "their weapons were formerly bows and arrows, with a war-club hung to the arm, and a square

shield which covered the body up to the shoulders." *Van der Donck*, 5:211

The people of Hochelaga seem to have had armor in 1535, which they showed to Cartier when they described some enemies: "an evill people, who goe all armed even to their fingers' ends. Also they shewed us the manner of their armour, they are made of cordes and wood, finely and cunningly wrought together." *Dawson*, p.37

Mr Walter Hough has illustrations of various kinds of coats of mail in his paper, *Primitive American Armor*, from specimens in the National Museum, dividing these into slat, rod, skin, plate, band and cotton-padded armor. The first three he ascribes to the Iroquois. For the use of slats bound together he adduces only a remark made by Charlevoix, that, "when they attacked any intrenchment, they covered their whole body with small, light boards." The remark applies but to one instance, where boards were hastily made and then thrown aside. For the use of skins he quotes from *New England Prospect*, that the Mohawks "wear sea-horse skins and barks of trees made by their art as impenetrable, it is thought, as steel, wearing a headpiece of the same." There is nothing to support this, the reference being to woven armor, and the error is in the material. At the time Wood wrote, the Mohawks had no access to the sea, and he probably had never seen one. This leaves the woven rods as the usual Iroquois body armor.

Many early writers may be quoted beside those given. Lafitau said "their cuirasses were a tissue of wood, or of small sticks of reed cut of proportionate lengths, strongly pressed against each other, woven and enlaced very neatly with small cords made of deer skin." They had similar armor for the limbs. The testimony of Charlevoix is much the same. Figure 59 is from Champlain's picture of a warrior in armor, which agrees well with those which follow.

Figure 57 is a rear view of a western coat of mail, made of sticks and twine, which may fairly represent that of the Iroquois. Several New York pipes and carved heads have helmets like that in figure 58. They seem made of a series of hoops, gradually becoming smaller and sometimes with a knob at the top. They were woven with twine. Another kind was cylindric, with some animal's head in front and a cover for the neck behind.

In an attack made by some Iroquois in Canada, in 1642, one "received seven buckshot in his shield, and as many in his body." Being cumbersome in the woods bucklers soon disappeared when found useless, yet the Mohawk name of *onneregware* for shield is preserved in the vocabulary of Father Bruyas, in 1675. The Iroquois might have even then found them useful in their wars in Illinois, and, if not, the sight of the western shields would have kept them in mind.

A curious use of a temporary shield occurred in 1660, being the one referred to by Charlevoix, when a party of Hurons and French were attacked by Onondagas and Mohawks. They took shelter in an abandoned fort:

The Iroquois came headlong, and with bowed head, to gain the palisade, and they aimed at sapping it by strokes of axes, with a courage which made them close their eyes to all dangers, and to the continual discharges which they made upon them. It is true that to secure themselves from the greater part of this hail, they made mantelets of three blocks of wood, bound side by side, which covered them from the top of the head even to the middle of the thighs, and by this means they fixed themselves under the gunners of the curtains. *Relation*, 1660

Another instance is that of the use of canoes as shields and ladders in the Erie war. The Iroquois had attacked an Erie fort which was bravely defended. Every assault of the besiegers was repulsed:

They took counsel to use their canoes as bucklers; they carried them before them, and by favor of this shelter behold them at the foot of the intrenchment. But it is needful to climb the great stakes, or the trees of which it is built. They set up their same canoes, and make use of them as ladders to mount upon this great palisade. *Relation*, 1656

This recalls what Capt. John Smith said of the Massawomeks, whom he met in Virginia, and who may have been a clan of the Eries. In his several accounts he showed his high esteem of their defensive armor. He bought shields of these and of the Susquehannas, calling them presents. The former he found useful when attacked by Indians, who had nearly taken one of his party:

Here, too, we found the value of *Mosco's* counsel, for he advised us to set the *Massawomek* targets about the forepart of our boat, like a forecastle, and they stood us in good stead, for, from behind

them, we could fire at the savages and beat them off the plain, without any hurt to ourselves; yet they shot more than a thousand arrows, and then fled into the woods. Arming ourselves with these light targets (which are made of small sticks, interwoven with strings of their hemp and silk grass), we rescued Todkill. *Smith, Captain*

With these good results and this warning, "we spent the rest of the day in fortifying our boat with our Massawomek shields." This was a high tribute to their value. He added: "As we went along, we are continually being shot at, but no hurt was done, because of our shields." A later and more formidable attack came. "More than a hundred arrows stuck in our targets and about the boat, yet none hurt."

Figure 66 shows the angular Canadian shield as represented by Champlain, with a straight base and curved top. He figured some sufficiently curved to stand by themselves, sheltering the warriors behind them. Figure 65 is a circular and more western shield from the same author. Both have fastenings for the arms, rather than the shoulders. The round bucklers of the Mohawks were mentioned in 1642, and they used both forms.

The fish spear, with either a bone or stone head, and often with none at all, being merely a sharpened stick, was undoubtedly used at an early day. The earlier Iroquois sites of the colonial period furnish many examples of the large bone harpoon, barbed on one side. The use of metal brought other forms. One for spearing eels by night, used in Canada in 1634, is thus described:

This harpoon is an instrument composed of a long pole, thick as three fingers, at the end of which they attach a pointed iron, which they arm on both sides with two recurved sticks, approaching each other at the end of the iron point; when they come to strike an eel with this harpoon, they spit it on this iron, the two sticks adjoining yielding to the force of the blow, and allowing the eel to enter; then they tighten of themselves, because they open only by the shock of the stroke, they prevent the spitted eel from getting out again. *Relation, 1634*

It is probable that the plan of this spear was very old, iron being substituted for bone, but the wooden sides remaining the same. In New York it long maintained its place. John Bartram was at Oswego Falls in 1743, and saw how the Indians took fish there with

a differing spear: "They strike them with long slender shafts 10 or 20 feet long, pointed at the end with iron, see the shape. The 2 splints of wood spreading each side, directs the point into the fish, which at a great depth it would be otherwise difficult to hit."

Bartram, p.47

In this the splints expanded towards the point, instead of contracting, the object of their use being somewhat different, but this is but a modification of the early idea, fully described only in Canada and New York.

Warlike usages

Running the gauntlet was a captive's customary trial among eastern Indians. He had to pass through two long lines of men, women and children, who inflicted blows as they were passed. Thorn branches were favorites for this, but there was a long array of other things. At the end of this the early Iroquois had a peculiar custom. That all might see the better, a bark scaffold was erected in every town, where prisoners were placed. In large camps a temporary structure was made. Other nations may not have used these. The Mohawks called this *askwa*, and several terms belonged to it. *Gaskontaraton* was to put the barks on it, in preparation for the torture; *askwaweron* was to take the prisoner from it. It was also called *ennisera*, or a high place.

The Jesuit Relations have the fullest accounts of these. Father Bressani was placed on one in a Mohawk camp in 1644. It was 6 feet high, and on it he had to sing and be tortured for several days. In the Mohawk towns he was placed on others. When Jogues and his friends were taken there in 1642, they ran the gauntlet. "Afterward they made them mount, entirely naked, a prepared scaffold, which is at the entry of the town." *Relation*, 1644

This location of the scaffold is in an account of the sufferings of Jogues by others. He himself placed it elsewhere after describing their painful entrance: "It was with great difficulty, under this hail of blows, that we reached the scaffold erected for us in the center of the village, our bodies all livid, and our faces streaming with blood." *Relation*, 1647

In 1665 the scaffold is said to have been in the Oneida village square. In 1653 Father Poncet was placed on a scaffold 5 feet high, in the center of a Mohawk town, and this was the usual place. If the prisoners were numerous, another scaffold was built. Posts rose above these, and the captives were tied to them for several days, tortured by slow fires and other cruel applications. Sometimes they had a speedier and less painful death.

On the return from a raid they secured the prisoners in various ways. Figure 63 is from an account written in 1666, which says:

They place his leg between these two posts in the hollow of the larger—that is the two posts catch the leg above the ankle, and they afterwards join one to the other and tie them at a man's height—sometimes higher, so that it is impossible to withdraw the foot without untying the cords. *O'Callaghan, 1:11*

Lafitau described a mode mentioned by others. For each prisoner four stakes were driven in the ground. They were laid on their backs and an arm or a leg was attached to each stake far apart. A halter was passed several times around the neck and fastened to a fifth stake. There were other ingenious devices.

The various memorial posts and paintings on bark deserve attention. Each cabin had its painted totem without, and often records of exploits within. For more public purposes, posts were sometimes erected, but oftener the bark was stripped from a tree, and the required painting made on the whitened wood. Colden and others have given accounts of these. The former said that on the tree they painted a representation of the party as it left the town, and another on the return. Quite a full account of all is given in the French description of the Iroquois clans in 1666, from which figures and notes are here taken.

First are figures of the nine Seneca clans, the nations not always having the same number. Figure 69 shows the totem of the Turtle clan, bearing a hatchet. Figure 70 is the Wolf with a war club. Figure 71 is the Bear carrying a sword or knife. These are the clans common to all the Iroquois. Figure 72 is the Beaver clan with an ax. Figure 76 the Great Plover with a club. Figure 75 the Little Plover with a sword. These sometimes form one clan.

Figure 74 is the Eagle clan with a hatchet, and this is often called the Hawk. Figure 73 is the Deer, and figure 77 the Potato, both unarmed. This is the only mention of the latter:

When they go to war, and wish to inform those of the party who may pass their path, they make a representation of the animal of their tribe, with a hatchet in his dexter paw; sometimes a sabre or club; and if there be a number of tribes together of the same party, each draws the animal of his tribe, and their number, all on a tree from which they remove the bark. The animal of the tribe which heads the expedition is always the foremost. . . . On their return, if they have prisoners or scalps, they paint the animal of the tribe to which they belong, rampant (*debout*) with a staff on the shoulder along which are strung the scalps they may have, and in the same number. After the animal are the prisoners they have made, with a *chichicois*, (or gourd filled with beans which rattle), in the right hand. If they be women, they represent them with a *Cadenette* or queue and a waistcloth. If there be several tribes in the war party, each paints the animal of his tribe with the scalps and prisoners it has made, as before, but always after that which is head of the party. . . . When they have lost any men on the field of battle they paint the men with the legs in the air, and without heads and in the same number as they have lost; and to denote the tribe to which they belonged, they paint the animal of the tribe of the deceased on its back, the paws in the air, and if it be the chief of the party that is dead, the animal is without the head. If there be only wounded, they paint a broken gun which however is connected with the stock, or even an arrow, and to denote where they have been wounded, they paint the animal of the tribe to which the wounded belong with an arrow piercing the part in which the wound is located; and if it be a gunshot they make the mark of the ball on the body of a different color. If they have sick, and are obliged to carry them, they paint litters (*boyards*) of the same number as the sick, because they carry only one on each litter. *O'Callaghan, 1:4*

Figure 80 *a*. This is a person returning from war who has taken a prisoner, killed a man and a woman whose scalps hang from the end of a stick that he carries. *b*. The prisoner. *c*. *Chichicois* (or a gourd) which he holds in the hand. *d*. These are cords attached to his neck, arms and girdle. *e*. This is the scalp of a man, what is joined on one side is the scalp-lock. *f*. This is the scalp of a woman; they paint it with the hair thin. *O'Callaghan, 1:7*

Other figures follow from the same account. Figure 78. "Council of war between the tribe of the Bear and that of the Beaver; they

are brothers. . . L. Is a belt which he holds in his paws to avenge the death of some one and he is conferring about it with his brother, the Beaver." Figure 79. "Council for affairs of state." The Bear and Turtle alone appear here, but the others may be added, each on its own side of the council fire. Figure 82. "Canoe going to war. Q. Paddles. They know hereby how many men there are in the canoe, because they place as many paddles as there are men. Over these is painted the animal of the tribe to which they belong." Figure 61. "This is a man returning from hunting who has slept two nights on the hunting ground and killed three does; for when they are bucks, they add their antlers. What is on his back, is his bundle." Figure 81 belongs to the same, described as follows: "T. Deer's head. This is the way they paint them. V. This is the manner they mark the time they have been hunting. Each mark or rather each bar is a day." Figure 62. "Fashion of painting the dead; the first two are men and the third is a woman who is distinguished only by the waist cloth that she has." Figure 83 is collectively "The Portrait of a Savage on a board in their cabin on which they ordinarily paint, how often he has been to war; how many men he has taken and killed." The description of the several parts follows: "a. These are punctures on his body. b. This is the way they mark when they have been to war, and when there is a bar extending from one mark to the other, it signifies that after having been in battle, he did not come back to his village and that he returned with other parties whom he met or formed. c. This arrow, which is broken, denotes that they were wounded in this expedition. d. Thus they denote that the belts which they gave to raise a war party and to avenge the death of some one, belong to them or to some of the same tribe. e. He has gone back to fight without having entered his village. f. A man whom he killed on the field of battle who had a bow and arrows. g. These are two men whom he took prisoners, one of whom had a hatchet, and the other a gun in his hand. gg. This is a woman who is designated only by a species of waistcloth. h. This is the way they distinguish her from the men. Such is the mode in which they draw their portraits." *O'Callaghan*, 1:9

There was a mention of this picture writing in 1642, when Father Jogues was captured by the Mohawks: "These barbarians, returning to their country, painted their victories on the trees which bordered the mouth of their river; they placed on the banks the heads of those whom they had massacred; they scrawled the visage of their prisoners; the figure of poor Isaac Jogues appeared among the others." *Relation*, 1642

Loskiel described this custom for memorial purposes:

They generally chuse a tall well-grown tree, standing upon an eminence, and peeling the bark on one side, scrape the wood till it becomes white and clean. They then draw with ruddle, the figure of the hero whose exploits they wish to celebrate, clad in his armor, and at his feet as many men without heads or arms as fell by his own hands. These drawings may last above fifty years, and it is a great consolation to the dying warrior, that his glorious deeds will be preserved so long. *Loskiel*, 1:25

In the unpublished Moravian journals these and other posts are often mentioned. When Cammerhoff and Zeisberger were going to Onondaga in 1750, they camped one night where "were 3 posts painted red, on which the Indians had fastened by their feet, according to their usual custom, the 3 Gatabes [Catawbas] whom they had taken prisoner." *Cammerhoff*

They crossed a creek flowing into the east side of Cayuga lake, which seems to be Salmon creek, then called Gientachne. War parties usually encamped there:

Here we saw the whole chancery court or archives of the Gajukas, [Cayugas] painted or hanging in the trees. Our Gajuka gave us a lengthy explanation of it all. When the great warriors go to war against the Gatabees, they make a painting of themselves. We saw several of these fine works of art done in Indian style. On their return they add their deeds in a painting, showing how many scalps they have taken, what they bring with them in the shape of treasures, bracelets, wampum and the like. The Gajuka pointed out to us with much importance, what he had himself painted, as he had been to war twice. The one time he had brought back 8 prisoners and 2 scalps, and on the other occasion 3 prisoners. *Cammerhoff*

When near Nine Mile creek, between Skaneateles and Onondaga, they came to another place of less note. The Cayuga guide

"explained to us that the War Archives, which we had found on the trees, had been painted by French Indians (their paintings can be recognized by the crosses which they paint on them) when they made war upon the Cherokees and brought back prisoners from them. We named our quarters the French Camp;" and Zeisberger often stopped there afterward.

One more incident of a similar kind appears in this journal. Their Cayuga guide had been sent ahead with the horses, and at one of their camps they heard from him. "By the paintings on the trees we at once discovered that our Gajuka had been here. He had shot 3 bears and 3 deer, and had slept here for 3 nights. All this we could tell from the horses and figures painted on the trees."

Mary Jemison, the White Woman, said that the war chief of each Iroquois nation had a war post in the town to record great events. It was a peeled stick, 10 or 12 feet high. For a campaign he made a perpendicular red mark, about 3 inches long and half an inch wide. On the opposite side a perpendicular cross, with equal limbs, represented a scalp taken. On another side a prisoner was represented by a St Andrew's cross, with a dot in the upper angle. Her husband had such a post for his personal use and others had the same. Heckewelder, in going to the Wabash river in 1792, mentioned an Indian meeting place: "Three tall painted war posts had been erected there, and there were three large distinct encampments."

The customs regarding the beginning of a war, the setting out and return of parties were not always alike, and Mr Morgan has given one of many. War was declared in council, and his remarks about the war post alone are quoted:

The existence of the war was indicated by a tomahawk painted red, ornamented with red feathers, and with black wampum, struck in the war-post in each village of the League. . . . Dressed in full costume, the war-chief who proposed to solicit volunteers and conduct the expedition, went through the village sounding the war-whoop to announce his intentions; after which he went to the war-post, *Gä-on-dote'*, and having struck into it his red tomahawk, he commenced the war-dance. *Morgan*, 1:330

By way of contrast, may be read Father Dablon's account of the leisurely preparations for war made every winter at Onondaga, describing the war dance, but saying nothing of the war post:

First of all the war kettle, as they call it, is hung over the fire as early as the preceding autumn, in order that each of the allies going to the war may have an opportunity to throw in some precious morsel, to be kept cooking through the winter, by which act they are solemnly pledged to take part in the proposed enterprise. The kettle having been kept steadily boiling up to the month of February, a large number of warriors, Senecas as well as Cayugas, gathered to celebrate the war-feast, which continues for several nights in succession. *Relation*, 1656

One of the stories about Painted Post was that of Patchin, the captive. He related the following incident, though unable to give the time of its occurrence:

An Indian chief on this spot had been victorious in battle, killing and taking prisoners to the number of about sixty. This event he celebrated by causing a tree to be taken from the forest, and hewed four-square, painted red, and the number he killed, which was twenty-eight, represented across the post with black paint, without any heads; but those he took prisoners, which was thirty, were represented in black paint, as the others, but with heads on. This post he erected.

Patchin observed that, whenever this post decayed, it was renewed and repainted. This is quite different from and less probable than the received story which follows:

In the summer of 1779, a party of Tories and Indians, under the command of a loyalist named MacDonald, returned from an incursion into the Susquehanna settlements, bringing with them many of their number wounded. At the confluence of Tioga and Conhocton rivers, Captain Montour, son of the famous Queen Catharine, a chief of great promise, died of his wounds. "His comrades buried him by the riverside, and planted above his grave a post on which were painted various symbols and rude devices. This monument was known throughout the Genesee Forests as '*The Painted Post*.' It was a landmark well known to all the Six Nations, and was often visited by their braves and chieftains." This account of the origin of the Painted Post was given to Benj. Patterson, the hunter, by a man named Taggart, who was carried to Fort Niagara a prisoner by MacDonald's party, and was a witness of the burial of Capt.

Montour, or at least was in the encampment at the mouth of the Tioga at the time of his death. Col. Harper, of Harpersfield, the well known officer of the frontier militia of New York in the Revolution, informed Judge Knox, of Knoxville, in this co., that the Painted Post was erected over the grave of a chief who was wounded at the battle of the "Hog-Back" and brought in a canoe to the head of the Chemung, where he died. It was well understood by the early settlers that this monument was erected in memory of some distinguished warrior who had been wounded in one of the border battles of the Revolution and afterward died at this place. The post stood for many years after the settlement of the co.; and the story goes that it rotted down at the butt, and was preserved in the bar-room of a tavern till about the year 1810 and then mysteriously disappeared. It is also said to have been swept away in a freshet. *McMasters*, p.34

In spite of the prominent place given to the war post by recent writers, the early ones almost ignore it. Charlevoix mentions it incidentally:

As often as any one in the public dances strikes the post with his hatchet, and recalls to memory his most signal exploits, as is always the custom, the chief under whose conduct he performed them, is obliged to make him a present; at least this is usual among some nations. *Charlevoix*, 1:332

The same writer said: "All those who enlist themselves, give also to the chief, as a token of their engagement, a bit of wood with their mark upon it." He also noticed another feature:

They have a kind of standards or colours to know one another by, and to enable them to rally; these are small pieces of bark cut into a round form, which they fix to the head of a pole, and on which is drawn the mark of their nation or village. If the party is numerous, each family or village has its peculiar ensign with its distinguishing mark. Their arms are also adorned with different figures, and sometimes with the mark of the chief. *Charlevoix*, 1:338

A novel use of sticks in battle was noted by another writer, in a fight between some Onondagas and Canadian Indians:

The captains of these two little troops encourage their men, they exhort them not to give way, and to die sooner than to flee. It is the custom of these captains when they find themselves close to the occasions, to produce some sticks, which they bring for this purpose, and present them to their warriors in order to fix them in

the ground, that they may protest by this action that these sticks shall sooner leave their place than they shall turn their faces. Yet it often happens that the sticks firmly remain, but the warriors do not give up flight. *Relation*, 1646

There was another shrewd use of sticks mentioned by Champlain in the expedition against the Mohawks in 1609. Before they entered Lake Champlain there was the usual divination to foretell their success:

After they learned from their diviners what was going to happen to them, the chiefs take some sticks a foot long, as many in number as they are, & point out their chiefs by others a little larger: Then they go into the wood, & level off a space of 5. or 6. feet square, where the chief, as sergeant major, places all these sticks in order as seems good to him: then calls all his companions, who come fully armed, & shows them the rank & order which they ought to keep when they should fight with their enemies: which all the savages observe attentively, remarking the figure which their chief has made with these sticks: & afterward they go away from thence, & begin to put themselves in order, as they have seen the aforesaid sticks: then they mingle one with another, & return again in their order, continuing this two or three times, & at all their quarters without there being need of a sergeant to make them keep their ranks, which they very well know how to keep without getting into confusion. This is the rule which they observe in war. *Champlain*, 1:336

The number of hostile Iroquois in the vicinity of Three Rivers, in 1637, was shown by 150 small sticks which they attached to a tree, and this way of counting was frequent at treaties or when promises of aid were given.

Canoes and fishing

Canoes were of two kinds: those of bark and those made by hollowing trunks of trees. The latter were used mostly along the Hudson river and sea coast; the former in the interior. Sometimes both were found in these two districts. A second division of bark canoes was that of the Iroquois and those of the Canadian Algonquins and Hurons. In the home territory of the former there was little canoe birch, and the bark of the red or slippery elm was used and sometimes the bitternut hickory. At a later day they also had birch canoes, but at first the line was sharply drawn. On the St Lawrence an Iroquois canoe was readily known afar off. While

this distinction appears in all early writers, Baron Lahontan was the only one of these who imperfectly figured the Iroquois bark canoe, which he did by way of contrast with that made of birch. His description and figures follow:

The Iroqueuse canoes are so dull and large that they can not sail near so quick as those made of birch bark. The former are made of elm bark, which is very heavy, and the form is very awkward; for they are so broad and long that 30 men row in them, two abreast, whether sitting or standing, and the sides are so low that they dare not venture them upon the lakes, though the wind be very slack. *Lahontan, 1:77.*

Figure 88 is his picture of this, with its men in place, and figure 87 represents his birch canoe. By way of contrast, figure 84 shows a modern elm bark canoe from Morgan, about 25 feet long and with a capacity of 2 tons. His description follows:

Having taken a bark of the requisite length and width, and removed the rough outside, it was shaped in the canoe form. Rims of white ash, or other elastic wood, of the width of the hand, were then run around the edge, outside and in, and stitched through and through with the bark itself. In stitching, they used bark thread or twine, and splints. The ribs consisted of narrow strips of ash, which were set about a foot apart along the bottom of the canoe, and having been turned up the sides, were secured under the rim. Each end of the canoe was fashioned alike, the two side pieces inclining towards each other until they united, and formed a sharp and vertical prow. . . Birch bark retained its place without warping, but the elm and hickory bark canoes were exposed to this objection. *Morgan, 2:26*

M. Pouchot gave an early account of the elm canoe:

After having taken off the whole in one piece, they shave off the roughest of the bark, which they make the inside of the canoe. They make end ties of the thickness of a finger, and of sufficient length for the canoe, using young oaks or other flexible and strong wood, and fasten the two larger folds of the bark between these strips, spreading them apart with wooden bows which are fastened in about 2 feet apart. They sew up the two ends of the bark with strips drawn from the inner bark of the elm, giving attention to raise up a little the two extremities, which they call *pincés*, making a swell in the middle and a curve on the sides, to resist the wind. If there are any chinks, they sew them together with thongs, and cover them with chewing gum, which they crowd in by heating it with a coal of fire.

The bark is fastened to the wooden bows by thongs. They add a mast, made of a piece of wood, and crosspiece to serve as a yard, and their blankets serve them as sails. *Pouchot*, 2:217

Not all elm bark canoes were large, and Alexander Henry described in making of two small ones near Toronto in June 1764:

We were employed two days in making canoes out of the bark of the elm-tree, in which we were to transport ourselves to Niagara. For this purpose the Indians first cut down a tree; then stripped off the bark in one entire sheet of about 18 feet in length, the incision being length-wise. The canoe was now complete as to its top, bottom and sides. Its ends were next closed, by sewing the bark together; and a few ribs and bars being introduced, the architecture was finished. In this manner we made two canoes; of which one carried eight men, and the other, nine. *Henry*, p.172

Charlevoix also noted the size. "The bark of the red elm is that of which the Iroquois make their canoes. Some of them which are made of one single piece, will contain twenty persons." *Charlevoix*, 1:249. Of the two kinds he said: "The one of the bark of elm, wider, and of very coarse workmanship, but commonly the largest. I know of no nation but the Iroquois, which have any of this sort." *Charlevoix*, 1:293. Kalm had a canoe of white elm bark and described its building. He said this was preferred as "being tougher than the bark of any other tree." *Kalm*, 2:130

These were easily made when the bark slipped, but not at other times, and early records often mention this. For home use the Mohawks made those which carried but two or three men. When Canadian wars ceased, they adopted birch bark. The famous white canoe of Hiawatha may have been of this kind, strongly contrasting with the darker elm bark of the Onondagas. When Cammerhoff and Zeisberger wished to go up the lake from the Cayuga village in 1750, they could get no boat. "As the canoes are all made of birch, the few which were to be had were cracked and dried up by the heat of the sun." Elkanah Watson was on Onondaga lake with other explorers in 1791, and said: "We passed several birch canoes with Onondago Indians, returning from fishing, accompanied by all their families, children, dogs, cats, fowls, etc. These birch canoes are extremely light—they sail like ducks upon the water, and some of them are whimsically painted." *Watson*, p.350

These may have changed somewhat in form from economic reasons. Good material is less abundant, and every useless pound adds to the labor at the portage. High bows catch the wind and make harder rowing, but all essential features remain. The general Onondaga name is ka-hone'-wah. Figure 85 shows a frequent form. Figure 90 is drawn from a plate in Bartlett's *Canadian Scenery*, published about 60 years ago, and is called "Canoe building at Papper's island." Canadian Indians, in modern costume, are fastening the bark on the frame, a woman is perforating other pieces, women wear the burden strap and carry paddles and baskets, a temporary bark hut appears on the right, such as travelers used in New York. It illustrates many features of Indian life. Some birch canoes were small. M. Pouchot described the larger ones:

The frame of these canoes is made of strips of cedar wood, which is very flexible, and which they render as thin as a side of a sword scabbard, and three or four inches wide. They all touch one another, and come up to a point between the two end strips. This frame is covered with the bark of the birch tree sewed together like skins, secured between the end strips, and tied along the ribs with the inner bark of the roots of the cedar, as we twist willows around the hoops of a cask. All these seams are covered with chewing gum, as is done with canoes of elm bark. They then put in cross bars to hold it and serve as seats, and a long pole, which they lay fore and aft in rough weather, to prevent it from being broken by the shocks occasioned by pitching. *Pouchot*, 2:218

This was the large size used by traders, often turned over as a shelter from the storm.

The birch canoe at once attracted attention from its novelty and perfect adaptation to a forest life. It has often been described and is still an example of the survival of the fittest. On the whole, there is no better early description than that of Charlevoix in 1721, which includes much not found in others. It is fully quoted here:

They extend the pieces of bark, which are very thick, on flat and extremely thin timbers of Cedar-wood. All these timbers from head to stern, are kept in form by little cross-bars, which form the different seats in the canoe. Two girders of the same materials, to which these bars are fastened or sewed, bind the whole fabric. Between the timbers and the bark are inserted small pieces of cedar, still more slender than the timbers, and which for all that contribute to

strengthen the canoe, the two extremities of which rise gently, and terminate in two sharp points bending inwards. These two extremities are perfectly alike; so that in order to go backward, the canoe-men have only to change offices. He who happens to be behind steers with his oar, still rowing at the same time; and the chief employment of he who is forwards, is to take care that the canoe touch nothing that may break it. They all sit low down, or on their knees, and their oars are a sort of paddles from five to six feet long, commonly of maple. But when they are obliged to stem any strong current, they are obliged to make use of a pole, and to stand upright, and this is called *picquer le fond*, or piercing the bottom. They must be well experienced to be able to preserve their balance in this work, for nothing can be lighter, and consequently easier to upset, than these vehicles, the largest of which, with their whole loading, do not draw above half a foot water. The bark of which they are built, as well as the timbers, are sewed with the roots of fir-trees, which are more pliant, and less apt to dry than the osier. All the seams are gummed within side and without, but they must be examined every day, to see whether the gum has scaled off. The largest canoes carry twelve men, two and two, and four thousand weight, or two tons. Of all the Indians, the most expert builders are the Outawais, and in general the Algonquin nations excel the Huron Indians in this trade. There are few French who can make a canoe even so much as tolerably well, but in conducting them, they are at best full as sure to trust to as the natives, as they exercise themselves at it from their infancy. All these canoes, the smallest not excepted, carry sail, and with a favourable wind make twenty leagues a day. Without sails you must have able canoe-men, to make twelve in still water. *Charlevoix*, 1: 294

Alexander Henry, the trader, going up the St Lawrence in 1761, used a very small birch canoe, 16 or 18 feet long. There were smaller ones, but this was the usual size for the smaller lakes and rivers. The larger ones, called northwest canoes, were employed by the traders for the long traverses and great lakes. These were from 30 to 35 feet long, 5 feet wide and $2\frac{1}{4}$ feet deep, carrying 6000 pounds, beside the crew of 8 or 10 men, two of whom could carry it over a portage. *Henry*, p.9

In New York such canoes would be used only on Lake Ontario and Erie and thus are but incidentally considered here, but Mr Henry mentioned some particulars worth quoting on the general subject:

To each canoe there are eight men, and to every three or four canoes, which constitute a *brigade*, there is a *guide* or conductor. Skilful men, at double the wages of the rest, are placed in the head and stern. They engage to go from Montréal to Michilimackinac,

and back to Montréal again, the middle-men at 150 livres and the end-men at 300 livres each. The guide has the command of his brigade, and is answerable for all pillage and loss; and in return, every man's wages is answerable to him. This regulation was established under the French government. *Henry, p.14*

The ordinary canoe from Albany to the seacoast was the dugout, and this was used in New England. Roger Williams described how independently a man fashioned this:

I have seene a Native goe into the woods with his hatchet, carrying onely a Basket of Corne with him, and stones to strike fire when he had feld his tree (being a *chestnut*) he made him a little House or shed of the bark of it, he puts fire and followes the burning of it with fire, in the midst in many places; his corne he boyles and hath the Brooke by him, and sometimes angles for a little fish; but so hee continues burning and hewing untill he hath within 10 or 12 dayes (lying there at his worke alone) finished, and (getting hands) lunched his Boate; with which afterward hee ventures out to fish in the Oceane. *Williams, ch.18*

In what is considered the earliest view of New York city in 1635, attributed to Augustine Hermann, is a strange form of the dugout which may possibly be the artist's fancy. It is a long boat, manned by five men, which has sloping ends rising far above the sides. From the highest point are long horizontal projections, terminating in large balls. There are smaller canoes of a common type. Figure 27 shows this form from an engraving of 1673, precisely like the former, but propelled by women. The figure is entitled *Navis ex arboribus trunco igne excavata*. No early writer has described this in New York, nor does it at first seem probable that the Indians would have made one of this form. Moulton accepted it, and suggested a fair explanation. He described the earlier figure. There was at each end, he said, "what may be termed a bowsprit finished by a spherical head about the size of a man's. These bowsprits or handles seem an ingenious contrivance for lifting the canoe and carrying it on the land, by two men hoisting it on their shoulders, and thus as on a pole, carrying it from place to place with ease and expedition." *Moulton, vii*

If it were light, two men might suffice, but for a heavier one four men might use crossbars, one at each end, and the balls would pre-

vent these from slipping. When left by the tide, something of the kind might have proved very useful. Pictures and descriptions, however, usually represent a heavy and clumsy boat, useful but neither handsome nor swift, with straight sides and sloping ends, rather a trough than anything else. Capt. John Smith gave an account of these which is much like that of Williams:

These they make of one tree by burning and scratching away the coales with stones and shels, til they have made it in forme of a Trough. Some of them are an elne deep, and fortie or fiftie foote in length, and some will beare 40 men, but the most ordinary are smaller, and will bear 10, 20, or 30, according to their bignesse. Instead of Oares they vse Paddles and stickes, with which they row faster than our Barges. *Smith, Captain*

It is evident that these would not be carried over land, and their speed argues a better form than pictures show. Whatever the form of the later Onondaga dugout, it differed in some unrecorded way from many used in Pennsylvania. Zeisberger and Frey spent some days at the fishery at Jack's reef on the Seneca river in 1753. Aug. 17 they went with the Onondaga chief "into the woods to find a tree for à canoe." Having found one suitable, they worked at this till the 26th, when they "finished the canoe and launched it; they were much pleased and said that there had never been a canoe of that kind in the neighborhood." As a consequence they had to make a similar one for another chief on their return to Onondaga. They had come up the Susquehanna in one made by themselves, but did not describe its peculiarities.

Figure 86 is a pine dugout of the modern type, quite narrow and of good form. Figure 24 shows the principal features of De Bry's picture of canoe-making in Virginia, slightly altered for convenience of illustration, and giving every process of the work. Dr Charles Rau's translation of his description follows:

Having first selected a thick and high tree, corresponding to the size of the boat they intend to make, they light on the surface of the ground close to its roots, and all around it, a fire, using well-dried tree-moss, and rousing the fire gradually by means of chips of wood, lest the flame might ascend too high and diminish the length of the tree. When the tree is nearly burned and threatens to fall, they light a new fire, which they allow to burn until the tree comes down by

itself. Having then burned away the top and the branches of the tree, in order to give the trunk the proper length, they deposit it on stems laid across forks, at a height convenient for their work; they now remove the bark with a certain kind of shells, and, using the less injured part of the trunk for its lower side, they light on the other side a fire all along the trunk, excepting its ends, and when they think there has been enough burning, they extinguish the fire and commence scraping with shells; having made a new fire, they burn again, and thus continue in succession, alternately burning and scraping, until the boat is sufficiently hollowed out. *Rau*, p.286

An early statement by De Vries follows, regarding canoes on the Hudson river:

Their canoes or boats are made of the bark of trees, and will carry five or six persons. They also hollow out trees and use them for boats and skiffs, some of which are very large, and I have frequently seen 18 or 20 seated in a hollow log, going about the river, and I have myself had a wooden canoe, in which I could carry 225 bushels of maize.

Figure 22 shows an ornamented and angular paddle from Champlain's picture. Figure 89 is from Lahontan and of a different form. Those in the interior were narrower than those near the sea, and often had shorter handles. Lahontan's description follows:

The Oars they make use of are made of Maple-wood, and their Form is represented in the annex'd Cut. The blade is 20 inches long, and four Lines thick. The Handle is about 3 Foot long, and as big as a Pigeon's Egg. When they have Occasion to run up against rapid Currents, they make use of Poles made of Pine-wood. *Lahontan*, 1:28

Figure 94 is part of a paddle which Mr W. W. Tooker had in 1880, from Canoe Place on Long Island. It is of oak and 34¼ inches long. The Onondagas call both paddles and wooden shovels *kah-kah-wēs'-sah*.

John Bartram mentioned a frequent ingenious arrangement for fishing at night, which he saw at Oswego Falls in 1743: "I saw upon one of their canoes in the morning a large piece of bark spread across. On this lay gravel and sand, and on these coals and ashes, which I supposed had been a fire, and the gravel placed there to save the bark. And I took it to be a design both to allure and see to strike the fish." *Bartram*, p.48

Francis Adrian Vanderkemp saw the Oneida Indians spearing eels in this way, when he passed through Oneida lake in 1792. "They are usually two or three in a canoe, one steersman, one who spears in the bow, the third takes care of the fires, made from dry, easily flaming wood, in a hollow piece of bark, first covered with sand." *Vanderkemp*, p.72

The French accounts of this early fishing on the St Lawrence assign two men to the canoe; one to paddle and one to spear. The latter had "a bark torch attached to the prow of his vessel." *Relation*, 1634

Nets were everywhere largely employed, and their stone sinkers are well known. They had an ingenious way of using nets in winter by passing them through holes in the ice. These nets were made of twine prepared from wild hemp. But a few years ago the women of the Five Nations prepared a fine thread of this material, by rolling it on the thigh in the old way. It was everywhere used. On the seashore nets were set at the mouths of bays and creeks at high tide, and the fish were taken when the tide went out. These nets were usually made by old men in New York, and a wooden needle was probably used. The Onondaga name for net was *ah-ah'-á*, to see through. The inner bark of the mulberry, elm and basswood was used for twine and cordage by the Iroquois, but the wild hemp seems to have been the favorite. Of this Kalm said:

Apocynum cannabinum was by the Swedes called Hemp of the Indians, and grew plentifully in old corn grounds, in woods on hills, and in high glades. The Swedes had given it the name of Indian hemp, because the Indians formerly, and even now, apply it to the same purposes as the Europeans do hemp; for the stalk may be divided into filaments, and is easily prepared. When the Indians were yet settled among the Swedes, in Pennsylvania and New Jersey, they made ropes of this apocynum, which the Swedes bought, and employed as bridles, and for nets. These ropes were stronger, and kept longer in water, than the common hemp. . . . On my journey through the country of the Iroquese, I saw the women employed in manufacturing this hemp. They made use neither of spinning-wheels nor distaffs, but rolled the filaments upon their bare thighs, and made thread and strings of them, which they dyed red, yellow, black, etc., and afterwards worked them into stuffs, with a great deal of ingenuity. *Kalm*, 1:412

Of this art among the Iroquois De la Potherie said: "The old men and those who can not or do not wish to go to war or the chase, make nets and are fishers. This is a plebeian trade among them. Their nets are made of thread of nettles or of white wood, the bark of which they make into thread by means of lye which renders it strong and pliable. *De la Potherie*, 3:33. It is to be noted that the white wood of early writers was commonly that now called basswood.

Fish weirs were also used by the Iroquois, usually formed of long lines of stones in which sticks and branches were placed, terminating in a rude box. These fishing places were assigned to sections of the nations. Wood entered into fishing in other ways. Father Bruyas mentioned some of these. Fishing with the hook was *gagatotsienton*, "to fish by drawing up the fish, as the Mohawks did with the herring." *Gaihonhenton* was "to fish in the fashion of the Oneidas, who chase the fish" through hurdles into a pound. *Atatokwisaon* was "to fish with a basket" in a stream. *Ganniero* was also "to fish for little fish with a basket."

Mr Morgan is the only one who has figured or described the basket used, but any large and deep basket might answer. The writer has taken minnows for bait in the same way. Figure 97 is a general reproduction of Mr Morgan's picture of the "*Yont-kä-do-quä*, or Basket Fish Net." He said:

The basket net was made of splint in a conical form, about 3 feet in length, 15 inches in diameter at the mouth, and 6 at the small end. In using it, the fisherman stood in the rapids of the creek or river, where the water rippled over the stony bottom, and with a stick or rod managed to direct the fish into the partly submerged basket, as they attempted to shoot down the rapid. When one was heard to flutter in the basket, it was at once raised from the water, and the fish was found secure within it. *Morgan*, 2:42

This was once easily done; but it is probable that two persons fished together, and that a judicious use of sticks and stones helped guide the fish to the basket. Fish were often driven into the weirs by stretching a grapevine across a river and drawing it along the bottom. The Oneidas made a pound by placing two rows of stakes across a creek. The upper one had an opening through which the

fish were driven. This was closed behind them, and they were speared in the inclosure.

The Onondagas also used a fish basket made like our lobster pots, and perhaps derived from them. When the fish had entered, the inside projections prevented its return. This basket was called *ka-ah'-he*.

Miss Powell said in her letter about the Indians at Buffalo creek in 1789: "We saw some of the squaws employed in taking fish in a basket. A gentleman of our party took the basket from one of them, and attempted to catch the fish as she did, but failing, they laughed at his want of dexterity." *Ketchum*, 2: 94

Household articles

Though the Indian's house was not large, and his housekeeping was simple, he had more articles of convenience than we might suppose, reckoning only those of wood. Chairs and tables he ignored; but food was more important than position, and in the preparation of this the wooden pestle and mortar had an old and prominent place. The stone pestle had little use in New York 300 years ago, though not discarded. Among the early illustrations of Champlain's travels is one of a Huron woman pounding corn in a wooden mortar. There may be a hidden expansion of the pestle, but, so far as appears, it is a cylindric stick of uniform thickness, while the present Iroquois pestle expands toward each end. The French missionaries to the Hurons had a handmill, but found the meal made in the mortar better than that from the mill.

The Iroquois wooden mortar is about 2 feet across and a little higher, a section being cut from a tree trunk of suitable size. This is set on end and is excavated by burning and scraping even now. The pestle is about 4 feet long, constricted along the middle and then expanded toward each end in a narrowly elliptic form. Two persons can pound together with alternate strokes, which is the favorite way. Figure 100 shows two Onondaga women thus employed. One may use the pestle alone. The Senecas call this mortar *ga-ne'-ga-ta*; the Onondaga word *ka-ne-ka'-tah* is almost the same. Figure 56 shows both pestle and mortar. The Onondaga name of the former is *ate-hā-tok'-wah*.

After the corn was pounded, two more utensils were required, a sieve and a tray or bowl. Mr Morgan gave a picture of the former used by the Senecas in the preparation of parched corn. After parching and shelling, he said this splint sieve "was used to sift out the fine ashes which might adhere to the kernel." Figure 35 shows what he called "*Yun-des-ho-yon-da-gwat-ha*, or Pop-corn Sieve." For sifting corn meal the Onondagas have one called by them *one-wakt'-hah*, thing to shake with. Figure 45 shows a common Onondaga form. It is merely a rectangular shallow basket, with small openings in the bottom. The final sifting is in the bark tray. The meal is shaken in this, and the light and coarse refuse is blown away. The Onondagas also use a deep and narrow basket for washing the corn after it is hulled. It is about 15 inches high and is called *a-nen-ō-hite'-ah*. Figure 67 shows one of these. Parched corn meal, called *psindamun* or *cittamun* by the Delawares, was in high esteem among all Indians. It was carried in a bag on journeys, and a little of it sufficed for a hearty meal when mixed with water.

The bark tray is less used than when Mr Morgan wrote, but is often found yet. Figure 46 is an Onondaga tray, called *kah-oon'-wah*, and of moderate size. This kind is used in sifting meal, as described. Morgan gave the Seneca name as *ga-wo-o'* and said it would hold from 1 to 10 pecks. Those seen by the writer are of the smaller size, made of elm bark, rounded and gathered up at the ends. The one figured is 23 inches long and nearly as wide. A border of hickory is stitched around the edge, and the tray is durable and convenient. The bark bowls out of which Bartram ate at Onondaga, may have been small vessels of this kind.

Bark dishes were mentioned at an early day, almost everywhere, though all often ate out of the large vessel in which the food was cooked. In a description of Algonquin feasts in 1626, we are told that "at these feasts they give to each one his share in the dishes or porringers of bark." *Relation*, 1626. When they sang, their accompaniment was "striking with their spoons or with their sticks on their bark dishes, or some other thing." *Relation*, 1642. In Canada each guest took his dish and spoon with him to a feast.

In 1675 John Josselyn wrote of the finer class of bark articles, such as once were common in New York, and said:

Delicate sweet dishes too they make of *Birch-Bark*, sowed with threads drawn from *Spruce* or white *Cedar-Roots*, and garnish'd on the outside with flourisht works, and on the brim with glistening quills taken from the *Porcupine*, and dyed, some black, others red, the white are natural, these they make of all sizes from a dram cup to a dish containing a pottle. *Josselyn*, 23:307

Such works of art may not have been used for ordinary meals and may have been too elegant for state occasions. As receptacles of ornaments they filled a need, but bowls and spoons had continual use. Van Curler found them among the Oneidas in 1634. From time to time a large kettle was brought in for the council, in which food had been cooked in another place:

If we happened to be in the house we received a basinful of food; for it seems to be the rule here that every one that comes here has his basin filled; and if there were basins short they brought them and their spoons with them. They sit side by side, and the basin, when empty, is taken and filled again. *Wilson*, p.95

The Canadian Algonquins used to cook in bark dishes, which they called *ouragana*, but had changed these for brass kettles before 1633. A writer of that year was surprised that these bark vessels were not burned. They told him that they placed the flesh and water in the dish, heated some stones, and cast them into the water, one by one. If they lost their kettles, some went back to the old way. These were used in New York at an early day.

In 1630 the Rev. Mr Higgeson mentioned "trayes, spoones, dishes, and baskets" among an Indian's household effects. Daniel Gookin is more explicit regarding the New England Indians, while his remarks will apply to those in most of New York:

Their dishes, and spoons, and ladles, are made of wood, very smooth and artificial, and of a sort of wood not subject to split. These they make of several sizes. Their pails to fetch their water in, are made of birch bark, artificially doubled up, that it hath four corners and a handle in the midst. Some of these will hold two or three gallons; and they will make one of them in an hour's time. From the tree where the bark grows, they make several sorts of

baskets, great and small. Some will hold four bushels or more: and so downwards to a pint. . . The baskets and mats are always made by the women: the dishes, pots and spoons are the manufacture of the men. *Gookin*, 1:151

John Josselyn adds this to the list already given: "Buckets to carry water or the like, large Boxes too of the same materials, dishes, spoons and trays wrought very smooth and neatt out of the knots of wood, baskets, bags and matts woven with *Sparke*, bark of the *Lime*-tree and rushes of several kinds, dyed as before. *Josselyn*, 23:307

Loskiel said of the New York Iroquois: "They make their own spoons, and large, round dishes of hard wood, with great neatness. In eating, many make use of the same spoon, but they commonly sup their victuals out of the dish." *Loskiel*, 1:54

The writer has several fine Iroquois spoons, which in their general form and the projection at the back and top of the handle suggest Eskimo forms, but has seen none where the bowl so nearly forms a right angle with the handle as in two figured by Morgan. One of these has a bear seated on the upper projection, and the other a group of human figures. One more near the usual angle has two men wrestling. A fourth has a bird at the top of the handle. Two of these appear in the new edition of the *League of the Iroquois*, and all four are included in Mr Morgan's report on the State Cabinet in 1852.

These figures being now accessible, the writer illustrates only some of those found at Onondaga, merely describing the larger and plainer examples. To these are added a few imperfect ones found in graves. The Onondaga name is *ah-to'-quat* and the Seneca *ah-do-qua-sā*. The Toronto collection has several taken from graves.

Figure 102 is of medium size, with a well carved group above. A slender animal, like a monkey, is holding down a bird. Figure 103 is shorter and the bowl narrower than with most. The design is a sleeping goose, which seems a favorite. It is of curled maple like many others. This is in the writer's collection and came from Onondaga. Like many modern examples, it has an angular expan-

sion in the handle above the bowl. A small one in the same lot has the lateral edges of the bowl parallel, from wear or original design.

Figure 101 is a fine specimen, of the same material and in the same collection. It is deeper than most and has no expansion in the handle. Part of the bottom is flattened. The carved figure above is quite spirited and represents an Indian lying on his back, holding a large bottle with both hands. From this he has just taken a drink with evident enjoyment, having half emptied the bottle at least. This was made at Tonawanda, though obtained of an Onondaga chief. All these are represented of actual size and were probably made within a century.

Figure 110 is another belonging to the writer, a front view being given that the full width of the bowl may be seen. At the top is a crow with the head turned back. Figure 150 is a recent one, made at Onondaga a few years since. It is very slender, and the narrow bowl has the general proportions of an ordinary teaspoon, but with the sides nearly parallel. It is 7 inches long, and the well carved owl at the top of the handle is nearly 2 inches long. This is an unusual form at Onondaga, where the earlier forms are still made. Not very long ago an old Indian there continually carved them, keeping an immense wooden bowl full for customers. They are stained with a native dye of hemlock bark. It is said that the wood was boiled before carving, thus cutting more easily. They are always dark and well polished by use, and the larger ones are now often used in making butter. Small ones were made for children. Morgan mentions carved wooden pitchers, but the writer has seen none of these. A curved knife blade was used in making spoons.

Another spoon in the writer's collection is $7\frac{1}{4}$ inches long and has a woodpecker above. A much larger one, $5\frac{1}{2}$ inches wide and $10\frac{1}{2}$ long, has the top but slightly ornamented, terminating in a large duck's head. This also belongs to the writer, who has seen it used at the table by the late Abraham Hill. The bowl is quite flat and apparently once larger, having now an obtuse edge.

Several reduced figures are given of old wooden spoons in the Hildburgh collection, all being from graves in Ontario county, N. Y. Figure 109 is a small one, 3 inches broad and with an unusually wide handle. These old spoons may not have had the carved top, though this is uncertain. This one seems perfect. Figure 106 is of the same width, but has a nearly circular bowl, the handle being apparently slender. Figure 108 is more like the modern form, but with a narrow handle. Figure 107 is a broken one, now $4\frac{1}{2}$ inches long, the handle being wide and angular.

Figure 104 is from another collection and from a Cayuga grave. It is of actual size and shows part of the handle, the bowl being circular and partly split. These early examples are given for comparison, but one approaching a perfect condition. No early writer speaks of carved figures on them, and they may have been quite plain. The first use of the projecting top was for suspension, as by a hook.

With spoons or fingers the Indians ate from a common dish, as the whites once did, and portions were often served in individual dishes or kettles, but the individual spoon was owned and used at a very early day. A Mohawk chief, killed in 1658, was known as *Atogwaekwan*, or Great Spoon, perhaps from the size of a spoon which he had. On the occasion of DeWitt Clinton's visit to Skenandoah in 1810, he said, "a large kettle of corn was boiling, which was the only breakfast the family appeared to have. It was occasionally dipped out from the pot into a basket, from which the children ate." This is the only mention of a basket used for succotash which the writer now recalls, and it may have been of bark or very closely woven. Skenandoah's finely dressed son also ate from this.

The writer found none of the characteristic Iroquois spoons in the National Museum in 1903; but it was a matter of interest that Cherokee wooden spoons had a slight bar above, ending in carved turtle heads. In no others did this feature appear; and the Cherokees were an early offshoot of the Iroquois family. Cherokee spoons have the modern oval bowl, and some St Regis spoons have this feature. A large ladle in that collection has a circular bowl,

9¼ inches across and 3 deep, the handle being 6 inches long and the top curved over but with no animal carving. Another has a narrower bowl, being 9¼ by 7 inches, and is shown in figure 60. The handle is 6½ inches long, curved at the top. In the same collection is a deep and well made tray, 9 inches long and 6 wide. Slight projections at each end serve as handles.

While much grain was put in pits, a great deal was stored in houses. The ears of corn often were, and still are, braided in long ropes, and festooned within and without the cabins. This was an old custom. Mention has been made of the stores of corn which Van Curler saw in Mohawk houses in 1634. He added that the Mohawks made bark barrels. In De Tracy's invasion of the Mohawks in 1666, the villages were found well stored with grain. In De Nonville's expedition of 1687, the Abbé de Belmont said that one Seneca village appeared at "a distance, to be crowned with round towers, but these were only large chests (drums) of bark about four feet in length, set the one in the other, some five feet in diameter, in which they keep their Indian corn. . . . There were in the four corners great boxes of corn which they had not burnt."

Mr Morgan has figured and described a bark barrel, but these are now rare, though boxes of the same form and material may be found. In speaking of bark vessels, he said:

The bark barrel, *gä-no'-quä*, was of the number. It was made of the inner rind of red elm bark, or of black ash bark, the grain running around the barrel. Up the side it was stitched firmly, and had a bottom and a lid secured in the same manner. . . . These barrels were made of all sizes, from those of sufficient capacity to hold 3 bushels, to those large enough for a peck. *Morgan, 2:23*

In his figure he calls this "*Gä-snä Gä-ose-hä*, or Bark Barrel," omitting the name given above. The Onondaga word for barrel and pail is *ka-nah'-kwah*, but the latter is also called *a-jen-tuk'-wah*, to dip with. Figure 96 represents one of these receptacles.

Mr Morgan also gives a figure of the bark ladle, or scoop, which he said "was made of red elm bark and would hold but little more than the common spoon." Figure 36 shows this; but these ladles are not now in use:

In most houses the hominy stick is still used for stirring pottage. Mr Morgan called it *got'-go-ne-os-hă'*, and the old Mohawk name has nine syllables. He said it was from 3 feet to 4 feet long, but the common Onondaga examples seen by the writer are not more than half that length. Their name is *ken-sto'-kwah*. Figure 91 shows a large one formerly used on public occasions at the council house, which was about $3\frac{1}{2}$ feet long and well carved. It was long since laid aside. They vary from simple forms to those elaborately worked. Figure 112 is an Onondaga example, 20 inches long. Morgan's figure is of one 4 feet long, cut out of one piece, though "the end piece is attached to the blade by a link. In the end piece are two wooden balls, also cut out of the solid wood within the frame in which they are confined." *Morgan*, 2:45. Analogous to this is his "*Ya-a-go-gen-ta-qua*, or Bread Turner," 6 inches long. These seem rare, and the hominy stick often serves both purposes. Figure 98 is from that given by Morgan. When at hand, the Indian women find it convenient to apply to unruly children, its principal use with some.

For their public feast the Onondagas had a large wooden spoon or ladle, used in dipping out portions from the big succotash kettle. Figure 92 shows this. A carved bird is at the top of the handle, but not in the usual position. This dipper was about 14 inches long, and of generous capacity. A tin dipper has long since taken its place.

Among other things, Morgan figured two corn husk salt bottles, which are now quite rare. Figure 113 shows one of these and figure 114 the other. Figure 111 is an Onondaga example of small size, belonging to the writer, but of basket form. The Iroquois have used salt for about 200 years and say their ancestors were stronger than they because their meat was fresh. The bottles are made of the finest husks.

Corn husks are a well known material for door mats, called *ka-je'-sah* by the Onondagas, something loose or uncombed. Whether these are of early use may be doubted, as they seem made wholly for white people. The Indian mat proper was made as smooth as possible. For a corn-husk mat a long braid is made of

the fine ends, leaving the rough bases projecting and all on one side of the rope. When this is sufficiently long, it is coiled and stitched so as to present a nearly flat surface, rough above and smooth below. The inner bark of the basswood is used in stitching, as common twine is apt to stretch.

Corn husks were once used for shoes, and masks are made of them for special purposes. Corn husk dolls are very ingenious, and one is figured which belongs to the writer. They are usually well clothed, but this would not allow their characteristics to appear. Figure 95 shows this of actual size, but the size varies much. In forming the head, the husk is reversed and drawn very smooth. The whole process is interesting.

Husks are selected at harvest time for various purposes and often kept in store. Braiding these was an early art, applied to the drying and preservation of corn. The husks formed a long rope from which the ears depended, and these were hung within and without the cabin. This is still a feature of New York reservation life. The old Mohawk name for these braids was *ommora*.

Bark mats were made quite recently to lie on, and other mats were important articles in Indian life, but early examples of these are rare from their perishable nature. Mr W. W. Adams found a piece in a brass kettle, holding about 4 quarts and taken from a Cayuga grave. It was "a mat of rushes, woven two strands over and two strands under. In the mat was about a quart of raspberry seeds. It is quite common to find berry seeds in the dishes from this place." These are also found in Seneca graves in small heaps, but without protection. Figure 32 shows a part of this mat, found in the town of Venice N. Y.

Roger Williams's account of mats has been quoted. When Hudson visited an Indian chief, he "scarcely had his head under the roof, but he was seated on two mats spread out on the floor." Lafitau had a picture of an orator standing on a mat, and there are frequent allusions to these. They were made of various materials, fine or coarse, and, when these were colored with the brilliant dyes of the country, they were often very handsome. Baskets and burden straps are the survivors of this early industry. These will properly come under another head.

When the Cayuga chief spoke at Montreal in 1661, on behalf of the Onondagas, he said: "Behold, this is to draw the French to us, in order that he may return upon his mat, which we have preserved for him at Gannentaa, where his house yet remains which he inhabited when he dwelt with us." If a colony of nuns would also go there, "We will prepare them great cabins, and the most beautiful mats of the country are destined for them." *Relation*, 1661

Neatness was hardly an aboriginal virtue; but an early French visitor to Onondaga, in 1655, observed that its streets were very clean when he made his grand entry, though the proverb has it that, the day Rome was unswept, the stranger came. In this case preparations had been made for the French visitor. Nearly a century later Cammerhoff and Zeisberger came to Onondaga, and were welcomed to Canassatego's large house by his wife, who sent for her husband:

In the meantime the house was being swept, and after an apartment had been prepared for us, we were invited into it, and the one side which was covered with beautiful mats was assigned to us. It was large enough for 6 Brethren to have lodged there comfortably, and was on the same side of the house as Ganassateco's own apartment. A room opposite to us was shown to our Gajuka. *Cammerhoff*, mss.

This was in 1750, but sweeping was then no new Iroquois custom. In the preceding century Father Bruyas wrote the Mohawk word *onhewen*, to sweep, and *jagonhewatha*, a broom. *Onnawenskeri* is another name for more than one of these. Zeisberger preserved a long name for broom; and the present Onondaga name of *kon-wen-cho-sat'-ah*, or ground sweeper, recalls the primitive floors of bark or log cabins. To place the broom across the door is still the Onondaga way of saying that no one is at home. Beside the early splint broom, a very effective one was made of twigs of hemlock spruce, bound around a handle. Indians and white men alike used this. In the journal of a Moravian Indian village on the Susquehanna in 1762, it was said: "Some sisters went with two horses to gather wood for brooms and baskets."

The splint broom is still made and finds sale in Syracuse. A triangular piece of ash is taken, long enough for broom and handle, and the broad end is splintered in the usual way, as shown in figure 42. When this is done, a groove is cut around the stick, leaving a space between rather longer than the splintered part. This portion is also finely splintered from above and turned back, meeting the ends of the first division as in figure 43. The whole is then stitched with bark thread, and the handle is shaved down as in figure 44.

When a kettle was to be hung over the fire, either from a crane or wooden pole, a simple wooden hook was and is used. Figure 116 shows one of these. A long and slender branch is cut, a fork left near the base serving as a hook. Two or three long sprays at the upper end are bent over into a loop, and their ends are braided around the main stem lower down. It is quickly made and is quite durable. In summer there is still much outdoor cooking.

The corn meal stirrer has been mentioned. An article much like it is the sugar spoon. This is more slender and is perforated in the center of the broad part. When dipped in the boiling syrup, this is blown on opposite the orifice, and the progress of the work is at once seen.

The primitive Indian ladder was very simple. The trunk of a tree with the branches lopped off sufficed. Such was the noted "Indian Ladder" over the Helderbergs, whose name still remains. A tree was often left in the center of a fort, prepared for easy climbing and outside observation. An inclined sapling or post with notches answered well for a house or defensive wall. Such were the ladders of which Champlain and others speak. Figure 120 shows a post or stationary ladder from an Onondaga cabin, which is yet preserved. It is 8 feet long, and one side is smooth. On the other, six notches are irregularly but smoothly cut. This was set up at a slight slope, and served a good purpose, but is now rarely seen. It was used by some of our pioneers also in their log cabins.

Father Bruyas gave two Mohawk words for ladder, *jerathenstha*, derived from the act of climbing, and *kannegota*, which seems its proper name. Words are derived from it to signify taking it up, drawing it back and laying it down, for this was movable. The Onondagas call it by its old name of *ah-tone'-ah*.

As the early Indians in Canada and New York used no salt, the modern wooden salt cellar, figure 48, had no place among them. White men living among them in the 17th century sometimes did without salt for years; and, when the Onondagas brought Father Le Moyne to the salt spring at Onondaga lake, they thought a demon dwelt in it. The Onondagas call the salt cellar *a-jik-ha-tuk'-wah*, salt box, and their name for the mineral means sour. Bruyas, in his Mohawk words of the 17th century, gave none expressly for salt, but recognized its use, as in *Takkiosiston*, Give me salt.

Gutters or conductors of bark entered into the household economy, but in a limited way. Champlain told how rapidly these discharged water on his fires at the Oneida fort of 1615. They were also employed in conducting the water from the spring around the Seneca fort in Victor. This was destroyed in 1687. It is probable these discharged into wooden reservoirs at convenient intervals. So obvious an aid would not be overlooked by a people sparing of personal labor, and they may have been an unnoted feature of many bark cabins. So Bruyas gives not only *atsannhon*, to let water fall drop by drop, but *atsennhonion*, a quantity of gutters.

Two charred articles from an Indian fireplace in Jefferson county were obtained by Mr R. D. Loveland of Watertown. Figure 38 is one of these and suggests the body and head of a wooden doll. The accidental fracture on the face adds to this impression, but was made in charring. The length is $1\frac{5}{8}$ inches, the edges are chamfered and notched, and the outline is perfect. Figure 37 is an inch wide by $1\frac{5}{16}$ inches long, is rectangular and flat, and has three edges chamfered. There are cross cuts in the center on both sides. They are the oldest New York Indian household articles of wood known to the writer, the charring having preserved instead of destroying them. The handle of a stone axe may be older.

Land travel and transportation

The numerous lakes, rivers and streams of New York enabled the Indian to travel easily and swiftly in his light canoe, even with considerable freight. For land carriage and travel he had long to depend on his own limbs. This necessity led to some ingenious de-

vices. In the deep snows of winter the snowshoe became a great aid, but nothing helped his feet in summer. As soon as possible, he availed himself of the horse, though it never became to him what it was to the prairie Indian. Wentworth Greenhalgh rode to Canandaigua and beyond on horseback in 1677; Colonel Romer rode to Onondaga in 1700; less than 50 years later parties of horsemen came there from Pennsylvania. By that time the Iroquois had horses, and probably much before. When Canassatego and his chiefs came to Lancaster Pa. in 1744, Witham Marshe wrote: "The deputies of the Six Nations, with their followers and attendants, to the number of 252, arrived in town. Several of their squaws, or wives, with some small children, rode on horse-back, which is very unusual with them." *Marshe*, 7: 178

He noted also that "they placed their cabins according to the rank each nation of them holds in their grand council. The *Onondagoes* nation was placed on the right hand and upper end, then the others according to their several dignities." Roger Williams noted their desire for horses in New England. At the close of the colonial period the Senecas had many horses, and Mr Morgan represented a saddle of the 19th century, called *ah-da'-da-qua*. At present all prefer driving to riding.

Snowshoes vary much in construction; but New York forms are usually a light frame, covered with a network of sinews or leather. The frame is pyriform in outline, usually not quite 3 feet long and nearly half as broad. The network, which has apertures about an inch across, covers all but a short space near the front, where the foot is fastened, allowing the toes to turn down when the heel rises. Fig. 2 is from an Onondaga example, 4 feet long. Mr Morgan has a good figure of a snowshoe, which the Senecas call *ga-weh'-ga*. The Onondagas term it *tā-yūn-twen-ky-en-tūk'-wah*, putting a board on the foot.

Among the Hudson bay Eskimos the Nenenot use four kinds of snowshoes, the swallow tail, beaver tail, round end and single bar. All these have network, but vary in outline. Those of Little Whale river are of a long oval form and made of flat spruce boards. These are used in soft snow. Bruyas may allude to something like this,

when, after giving *gahwengare* as snowshoes in Mohawk, he speaks of going to cut some. Charlevoix described Canadian snowshoes in these words:

They are about three feet long and from 15 to 16 inches in their extreme width. They are of an oval shape, except that the hind part terminates in a point; there are small bits of wood placed cross-wise 5 or 6 inches from either end, which serve to strengthen them, and that on the forepart is as it were the string of a bow, under an opening in which the foot is inserted, and made fast with thongs. The tissue or covering of the snow-shoe is made of straps of leather two fingers broad, and the border is of a light wood hardened in the fire. *Charlevoix*, 1:335

Prof. Otis T. Mason speaks of the Eskimo snowshoe, made "of two pieces of wood bowed and lashed together at the ends in lenticular form." He adds that, "in the Iroquois and Sioux country, and also among the voyageurs, the two-part frame reaches its perfection, being neatly made and gracefully turned up in front." *Mason*, p.383. The reference is not to the Iroquois of New York, but of Canada. He adds something on the range:

The snowshoe line southward is on the isotherm of northern New York. There was abundance of raw material for making them, and the question was one of demand. If the snow was too soft to sustain the wearer, it mattered not how deep it lay, that only made matters worse. There was also a northern limit of good snowshoes. It lay within the Arctic circle, where the snow became hard enough in the long winter nights to sustain the hunter without them. *Mason*, p.383

At present snowshoes are almost unknown on the Onondaga reservation, while at St Regis they are seen in almost every house; yet the Onondagas used them freely in early days, on long hunts or on the warpath as well as at home. In Pennsylvania they were not so constantly on hand. Thus in the journal of a Moravian Indian town there, Feb. 1, 1753, it is said: "Our young folks made snowshoes, as the snow is so deep no one can go beyond a mile of the town." The Rev. Charles Wooley, writing in New York about 1678, described the broad snowshoes which the Indians used in deep snows, traveling "without sinking in the least." This might have been told him, though he met the Indians familiarly.

Charlevoix mentioned the aboriginal sled in Canada, but there is no record of this in New York for transportation. Invention there found other means of making burdens portable. The basket, of course, had a foremost place, and its use in fishing has been mentioned. Ordinarily it contained many articles, large and small, and its size was in proportion. When young, the writer often saw Onondaga women with huge baskets on their backs, out of which sometimes peered the faces of one or two children, hemmed in by other things. The long burden or basket strap, drawn across the forehead, easily held them in place. Within a few years he has seen a squaw passing between two rows of corn, plucking the ears on either hand, and throwing them over her shoulders into the basket. Only the older women now carry the basket thus, and they but rarely. The Onondagas call it *ka-ah'-sah*.

The subject of native basketry has attracted much attention of late, and several valuable works treating of this, have been published. The most elaborate of these is by Prof. Otis T. Mason, issued by the Smithsonian Institution and entitled *Aboriginal American Basketry*. All classes of baskets, and all parts of the country are systematically treated in this work, and the absence of eastern specimens is conspicuous. It is probable that these never rivaled western baskets, and yet there were early examples, here of some artistic merit. Gookin described New England baskets, large and small, made of rushes, coarse and silk grasses, corn husks, wild hemp and the bark of trees. "Many of these are very neat and artificial, with the portraiture of birds, beasts, fishes and flowers upon them in colors. Coiled basket ware has been attributed to the early Ojibwas and other Algonquins. Some early patterns have been reclaimed from impressions on New York pottery. Professor Mason says:

All along our northern border and in many parts of Canada the Iroquois and Chippewa now fabricate baskets from the ash, birch, linden, and other white woods, and the vernal or sweet grass (*Savastana odorata*). The method of manufacture is universally the same; it is the plainest in-and-out checker and wicker weaving. The basketry is far from monotonous, however, for the greatest variety is secured by difference of form, of color, of the relative size of the parts, and of ornamentation. In form the baskets run the whole

gamut as among the Haida and Makah, guided by the maker's fancy and the demands of trade. These Indians all live on the border of civilization and derive a large revenue from the sale of their wares. The colors are of native manufacture—red, yellow, blue, green, alternating with the natural color of the wood. To begin with the rudest, let us take a dozen or 16 strips of paper half an inch wide and cross them so as to have one half perpendicular to the other half, woven in checker at the center and extending to form the equal arms of a cross. Bend up these arms perpendicular with the woven checker and pass a continuous splint, similar to the framework, round and round in a continuous coil from the bottom to the top. Fit a hoop of wood to the top, bend down the upright splints over this, and sew the whole together with a whipping of splint, and you will have the type basket. Now, by varying the width of the splint used to cover the sides, a great difference of appearance is secured. . . Finally, the Algonkin, as well as the Southern Indians, have learned to decorate baskets with a great variety of rolls, looking much like the napkins on the table of a hotel. The weaver draws a splint under the warp stick, gives it a turn up and down, or two turns in different directions, and draws the loose end tightly under the next warp stick but one. The operation is repeated, forming around the basket one or more rows of projecting ornaments. *Mason, Basketry*, p.373

With so many accessible works on basketry, profusely illustrated, styles of weaving need not now be discussed. In New York modern forms have largely replaced those of early days, and to illustrate present styles would be to represent those having few aboriginal features. Yet it is a favorite Indian industry, largely followed on some reservations, notably at St Regis and Onondaga. On the latter the basket ash has been exhausted in the vicinity, and the material has to be procured at a distance. In early days the Indians would have camped or moved the town there. The wood is cut into suitable lengths, brought home, hammered with an ax or maul till the fibers separate, and then peeled off in long, thin strips. Various dyes are used, commonly before weaving. With the increased fineness of basket work, thinner strips are required, and not long since the writer found an Indian friend using an iron tool with teeth, which insured the desired quality. Sweet grass is also employed for some delicate work. Many handsome baskets are made, and the writer has a pretty one of simple design, woven by a girl four years old. It is all home work; and figure 152 shows an Onondaga basket maker sitting before her door.

Some Indian tribes still use long bone awls in making baskets. These are the large ones, retaining the joint at one end; and it is probable that the early Iroquois used these in weaving mats and the finer baskets. Professor Mason adds:

Twined weaving was common throughout the Middle and Eastern states of the Union in prehistoric times. Fabrics of this class were employed by the ancient potters in nearly all of the states. Every variety of twined weaving known to the modern Indian was practised by the old time people—the mound builders especially.

The burden or basket strap is more characteristic and was indispensable at an early day, though now becoming quite rare. Mr Morgan gave a good figure of this, with its Seneca name of *gus-ha'-ah*, in Onondaga, *kas'-ah*. His remarks on this are quoted:

The burden strap is worn around the forehead and lashed to a litter, which is borne by Indian women on the back. It is usually about 15 feet in length, and braided into a belt in the center, 3 or 4 inches wide. Some of them are entirely covered upon one side with porcupine quill work. . . . The braiding or knitting of the bark threads is effected with a single needle of hickory. In other specimens, the quill work is sprinkled all over the belt for ornament, the quills in all cases being of divers colors. *Morgan*, 2: 16

The foundation was of elm bark twine, but wild hemp was often used. He had one made by an Onondaga in Canada, adorned with colored moose hair, woven in regular patterns on the upper surface of the strap. White, red, blue and yellow were used. This was called *o-ā-ta-ose-ka*. Elk and deer hairs were also used. For wider illustration, the writer figures some Onondaga examples which are not so long or handsome.

Figure 122 shows most of the ornamented part of one. The ground is black, tapering both ways into the narrower and long extremities. These look like buckskin, but are of elm bark. The beads on the edge are white. The first diamond on the left is white with a green center; the other white with a red center. The sloping bar is of white, red, green, red and white lines. The straight bars are of white, red, green, red and white lines also. Another strap had geometric patterns of red, white and blue, running lengthwise, and was more elaborate. They are often perfectly plain. Figure

124 is Aunt Dinah's burden strap, and is of alternate flaxen and purplish hues, being $5\frac{1}{2}$ feet long. It belongs to the Onondaga Historical Association.

Both strings and ropes were made of elm bark, and figure 51 shows one of the latter, called *an-hye-ach'-hah* by the Onondagas. Fine bags were made of this. Clark thus describes one in which the wampum belts were kept at Onondaga:

The bag which contains these relics is of itself a singular curiosity. It is made of the finest shreds of elm bark, and a person without being apprised, might easily mistake it for the softest flax. Its capacity would exceed a bushel. This bag is reputed to be as old as the league itself, and certainly bears the marks of great antiquity. *Clark, 1: 125*

The writer examined this 30 years later, and it was as well preserved as in Clark's day. It might have lasted to this time had it not been cast aside when the belts were dispersed at Thomas Webster's death. To make it coeval with the league is a mere fancy.

Quantities of the inner elm bark are kept for use, after having been boiled in lye, sometimes in loose masses and sometimes braided, as in figure 49. Out of a mass of this at Onondaga, the writer took a small piece for illustration in figure 50. It easily separates into very fine filaments and is quite strong. The straps are woven in many ways, and a blind Onondaga woman was very skilful at this work, some of which remains.

White men sometimes used the burden strap. When Cammerhoff went from Onondaga to the Senecas in June 1750, he said: "We had no straps for carrying. David went out and procured some inside bark, and with it manufactured a pair as well as he could. Thus we were able to carry our bundles." *Cammerhoff, mss*

These were not so good as those the Indians made, as they found when they came to Cayuga: "We bought a pair of straps for carrying from our Gajuka's mother, as ours of bark would not answer well, and our baggage had grown heavier. . . . David had a great load to carry, between 50 and 60 pounds, and besides his gun and powder and lead." *Cammerhoff, mss*

Belonging to this was the burden frame, sometimes called the litter. It was an early and ingenious means for carrying loads of almost any kind. After a battle the wounded were placed in these, and Champlain graphically recorded his experience after the attack on a fort in 1615:

They began to prepare litters to convey their wounded, who are put in them, tumbled in a heap, doubled and strapped in such a way that it is impossible to stir; less than an infant in its swaddling clothes; not without considerable pain, as I can certify, having been carried several days on the back of one of our Indians, thus tied and bound, so that I lost all patience. As soon as I had strength to bear my weight, I got out of this prison, or to speak plainer out of hell.

The great soldier and explorer was no light weight, but fortunately the strap and frame were even stronger than his words.

Mr Morgan gave a good picture and description of the burden frame, called *ga-ne-ko-wa'-ah* by the Senecas, and *ont-ha-nah-ka-tast'-hah* by the Onondagas. It is usually plain and has two hickory or elm bows, each bent over like the back of a chair, and these are brought together at right angles when in use. Cross bands of elm bark keep these in position, strengthen the frame, and also furnish hinges, so that it may be folded. To this frame the strap was attached, passing over the forehead, the long ends being used to secure the load. Figure 125 is an Onondaga example of the ruder kind, nearly 20 inches high. The strap is omitted. Figure 117 is another, more elaborate and modern, folded in the illustration. It belongs to the Onondaga Historical Association. One part has a light board frame, and the other has rods instead of bark.

Baby carriages are now much used by the New York Iroquois, but the Indian cradle still survives and is in frequent use. The Onondagas call it *kah-ah-hōn'-sah*, and from the odd resemblance they give the same name to Jack-in-the-pulpit. Some yet used are as much as 60 years old. Figure 41 shows the back of an Onondaga cradle, 30 inches high and 14 inches wide at the top. The burden strap is 8 feet long and $2\frac{1}{2}$ inches in extreme width. This is attached to the crossbar near the top. Thongs pass through the board.

Prof. O. T. Mason has found no cradle boards among the Eskimos, in Mexico or tropical America. He says:

The American aboriginal cradle is influenced by climate. It can not exist in extremes of heat or cold. In the one case the child would be smothered, in the other it would be frozen. Again, whatever may be the material, whether birch bark, rawhide, a flat board, a dugout, a frame of rods, the infant's head is never placed in contact with it. There is always between the head and this hard frame or board a pillow of fur, hair, shredded bark, down or some other substance. *Mason*, p.500

But three New York examples are in the National Museum; and he described one of these from St Regis. The back is carved to represent peacock feathers and is brightly painted. It is square at the top and has a movable foot rest. The length is $29\frac{1}{4}$ inches, top width $10\frac{1}{2}$, and bottom $8\frac{1}{8}$ inches. At St Regis white men make these for the Indians. Another was 31 inches long.

Morgan called the cradle *ga-ose'-hă* and gave a figure with the child swathed in belts of beadwork, now rarely used. The writer has photographed several Onondaga children on the boards, but the wrappings were quite simple. Morgan's cradle was 2 feet in length, 14 inches wide, with a carved foot board, and a hoop or bow near the top, extending a hood over the child's head. It is hung up or carried by a cord. One of his figures shows the simple frame. *Garhon* was the early Mohawk name.

Figure 126 is an Onondaga example, made by Harry Webster and now about 70 years old. It is 27 inches long, and the little bed is ready for use. Figure 127, *a, b*, shows some of the carving of actual size. As much depends on personal taste, cradles vary much in this and other details, while essentially the same. The child is laid on the cushion, the wraps are fastened around, and then it can be carried, set against a wall or hung on a bough. Figure 99 shows an Onondaga child as one usually appears now when held by the mother. Fig. 149 shows the well carved and brightly painted back of a cradle belonging to the writer. The length is 32 inches and the breadth 1 foot. Though bought at Onondaga and said to be 50 years old, it may be from St Regis; but the Onondagas say they formerly made those like this. The birds and beasts are quite good, and many colors

were used in painting it a second time. The hoop for the hood is also carved as usual.

In Canada these cradles were briefly described in 1611 and often after, but not at much length, and in New York and New England the early writers took little notice of them.

Bruyas gives the Mohawk word *gaon*, meaning a bark fan, but without description. In making maple sugar a bark vessel was used for collecting and carrying the sap. Figure 33 shows one of these. Part of the outer bark was removed, and the ends were formed by turning up the inner bark. The Iroquois feast of the maple was the earliest of the spring.

A staff, often finely carved, might be used by an old person. Old Aunt Dinah seldom appeared without one, and one 5½ feet long was made for a kind lady whom the Onondagas much admired. It was well carved and proved useful in climbing the hills in her mission work. Another had on it the word *Onondaga*, the council house, three Indians joining hands on one side of this and three white men on the other.

Ceremonial articles

Sticks or poles always had and still have a prominent place in councils, for the better exhibition of wampum and presents. In the condolence council the ceremonial wampum is hung on a stick, and removed and returned a bunch at a time. The wampum sent out to call a council has a small stick attached, on which notches are cut, one for each day before the council. The recipient cuts away a notch daily and thus preserves the date. The writer has a string of white wampum, calling a religious council, and on the accompanying stick the notches had been cut and removed. Figure 93 shows this of actual size. Bruyas called the dry message stick *gahwengare*. An Indian friend of the writer had lost her son. She had a long stick on which she cut a notch every day, a cross cut for Sunday, and thus easily numbered the days and weeks after his death. When visitors are now welcomed on solemn occasions, a messenger meets them and then records and reports their number on a stick. The Onondagas call the tally stick *ose-sā-tah O-en-nāh'-ka*, counts on a stick.

The Hurons placed a limit on story-telling in a similar way:

They present to him from whom they desire to hear any thing, a little bundle of straws, a foot long, which serve as counters, to supply the place of numbers and to aid the memory of the assistants, distributing in different lots these straws, according to the diversity of the things which they recount. *Relation*, 1646

In 1648 the French gave the Hurons "a bunch of sticks tied together, to show the number of presents they required" for a murder committed.

When Father Chaumonot went from Onondaga to the Senecas in 1657, it is said:

His guide presented to him a bit of wood to throw upon two round stones, which they encountered in the road, surrounded by marks of the superstition of these poor people who throw, in passing, a little rod upon these stones in the way of homage, and adding these words: *Kouë askennon eskatongot*; that is to say: Hold, behold this is to pay my passage, in order that I may go on in safety. *Relation*, 1657

Montanus said of the New York Indians that, in agreeing on matters of importance, "they take as many little sticks as there are conditions in their proposals." Sticks were temporarily used by the Iroquois when there was not enough wampum, but were always replaced with belts or strings. Loskiel says they used colored bits of wood before they had wampum.

De Vries gave a curious account of a council he attended in 1643: "There was one among them who had a small bundle of sticks and was the best speaker among them." He spoke, and "then he laid down one of the sticks, which was one point." He spoke again, and "then laid down another stick. This laying down of sticks began to be tedious to me, as I saw that he had many sticks in his hand." *De Vries*, 13, 118

This does not differ from the use of strings, but sticks were often given to persons charged with remembering special parts of an address, and Kalm speaks of cutting notches on a stick for the same purpose. Sir William Johnson, in his letter to Arthur Lee, spoke of another use:

As to the information wch you observe I formerly Transmitted to the Gov^r of N. York concerning the belt & 15 Bloody Sticks

sent by the Mississagaes, The like is very Comon and the Ind^s use Sticks as well to Express the alliance of Castles as the number of Individuals in a party. These Sticks are generally ab^t 6 Inches in length & very slender & painted Red if the Subject is War but without any peculiarity as to Shape. *O'Callaghan*, 4:437

Sticks were used to point out direction or to indicate the time of day. In the French account of Iroquois customs in 1666 is an illustration, from which figure 64 is taken. The writer said:

A stick set in the ground to the extremity of which two or three pieces of wood are attached, to denote the direction in which they went when they are hunting; and on the nearest tree they paint the animal of the tribe to which they belong, with the number of guns they have. *O'Callaghan*, 1:10

Heckewelder mentions a sundial of this kind:

A clear place in the path is sought for, or if not readily found one is made by the side of it, and a circle or ring being drawn on the sand or earth, a stick of about two or three feet in length is fixed in the center, with its upper end bent towards that spot in the horizon where the sun stood at the time of their arrival or departure. *Heckewelder*, p.131

A still more curious account is in Morse's *Geography*, published in 1795. A Seneca Indian wanted to leave a message for his friends:

He took a piece of wood and hewed it flat and smooth, and then raked his fire for a suitable coal, with which he rudely delineated on the slab the figure of an Indian, carrying a gun reversed upon his shoulder. In front of him he drew a crooked line, which reached to a man with a long coat and cocked hat, and holding a cane in his hand; and behind him a framed house. He then took a straight pole, and tied some weeds and grass upon one end of it, and fixed the other in the earth, in such a manner, that, in the position the sun then was, which was six o'clock in the morning, it cast no shadow—or, in other words, he pointed it exactly towards the sun. The meaning of all was this: "Susquewewah (the name of the Indian) left this spot at six o'clock in the morning, or when the sun was in the place where the pole pointed, and had proceeded up Wood creek, (which is remarkably crooked) to the settlement where the commissioners of the State of New York are assembled to hold a treaty with the Indians." *Morse*, 1:92

The False Faces who throw ashes are called *Hon-to'-ye* by the Onondagas. A paddle is used in doing this on some reservations,

but not at Onondaga now, though Clark speaks of these there at the New Year's feast:

The fire is now extinguished in every cabin, the committee enter the dwellings (the inmates expecting them,) and with a small wooden shovel scatter the ashes about in every direction. The hearths are made clean; new fire is struck from the flint and rekindled; thus they proceed from house to house till every one is visited and purified. *Clark*, 1: 56

Jedediah Horsford gave a similar account in 1816, at Squakie Hill, N. Y., but with a difference. The proceedings of each day were not the same as at Onondaga, and on the second day, he said:

Five Indians appeared with long wooden shovels, and began to scatter fire and ashes until the council-house became filled with dust and smoke. This ceremony was repeated at each house several times during the day, but to a different tune at each round. Speeches, exciting levity, occurred the third morning. About noon the fire-shoveling was repeated with increased vigor. *Doty*, p.54

In Canada the scattering of ashes, or *Ro-non-wa-ro-rih*, is two days after the burning of the white dog, and leaders of the paddle party are appointed. New paddles are distributed to all, which are returned to the master of ceremonies after a song called "tipping the paddle," and other observances.

Idols

In a strict sense idols were not a feature of New York aboriginal life. Most Indians had amulets, charms or medicine, but these were personal and usually out of sight. Perhaps the reverence paid to Christian symbols, or contact with western and southern tribes, may have suggested something more tangible than unseen spirits, present everywhere. They revered certain rocks and places at an early day, as being the homes of powerful spirits, and made offerings to these, but a change seems to have come early in the 18th century, affecting the Senecas particularly. The Delawares shared in this: "Their only idol was called, in Delaware, *Wsinkhoalican*. It was the figure of a miniature human head carved of wood and carried about their persons, or cut, life-size, out of a post, and set up in the middle of the house where they sacrificed." *De Schweinitz*, p.96

Loskiel said that the head was put on a pole; and it would seem

that the ordinary wooden mask may have been intended. While with the Mohawks in 1634, Van Curler made this note, apparently of the usual medicine: "The chief showed me his idol; it was a head, with the teeth sticking out; it was dressed in red cloth. Others have a snake, a turtle, a swan, a crane, a pigeon, or the like for their idols, to tell the fortune; they think they will always have good luck in doing so." *Wilson*, p.88

Maj. James Norris, while at Chemung with Sullivan's army, Aug. 12, 1779, said: "In what we supposed to be a Chapple was found indeed an Idol, which might well enough be Worshipd without a breach of the 2d Commandmt. on account of its likeness to anything either in heaven or Earth." *Conover*, p.229. Other soldiers said the same in other places.

The following, from Col. Thomas Proctor's journal of Ap. 3, 1791, is more to the purpose. He was at the village of Canaseder, on a high bluff overlooking the Genesee river, between Squakie Hill and Oil Spring. He said:

In this place was erected a wooden statue, (or deity) fashioned like a fierce looking sage. This formerly they worshiped by dancing before it on certain festival occasions or new moons, looking on it as through a veil or assistant, whereby they pay adoration to the Supreme Spirit, as knowing it hath a form, but not a substance. *Proctor*, 4: 565

At Cornplanter's upper village, Ap. 21, he saw a thanksgiving feast, in which a statue appeared. Due preparations were made:

Thus prepared, they proceed to the statue, which was erected in the center of the village, bearing some proportions to a man, and justly painted as the Indian at its coming, but having no weapon of war about him, intimating that he was the maintainer of peace. This figure is about 9 feet in hight, and stood on a pedestal of about 12 feet, having on breech clout leggings, and a sash over its shoulders, and a very terrible appearance. Under this statue were placed two chiefs, termed the women's speakers; each of these had in his hands the shell of a large tortoise, the belly part covered with a thin skin, stretched very tight, having in the inside several small stones; which shells being struck upon a deer skin which is stretched between them, beating time together, accompanying the same with their voices, they made such melody that the whole of the assembly were delighted. The old and the young women danced around in a circle, the image in the center, the men following them, using

gestures that would have made saints laugh, had he forgotten that he was in a place of worship; but the women looked meek and humble while they moved in concert in the dance, sliding their feet sideways, looking at the same time steadfastly on the ground, inclining their heads to the left. *Proctor*, 4: 578

A larger figure was mentioned in an account of Cold Spring, Cattaraugus co., published in 1841: "A few years since, a portion of the Indians in this town were in the practice of collecting around a log about 30 feet long, worked into a resemblance of the human form, to which they performed a kind of worship. The son of Cornplanter subsequently persuaded them to throw it into the river." *Barber and Howe*, p.83

The large wooden images over the gate of Oneida, in 1634, were probably ornaments. The wooden masks had a different purpose. In all New York the Senecas alone had a worship of this kind, and it was of recent date with them. When dogs were sacrificed, they were often hung on poles for several days, and were conspicuous in some towns in Sullivan's campaign. In colonial times this also seems purely a Seneca custom.

In Col. Daniel Brodhead's report in 1779, he said "at the upper Seneca Towns we found a painted image or War post, clothed in Dog skin," *Conover*, p.308. This may fall under either head, but the Senecas were evidently partial to images. The other Iroquois paid no reverence to them, but did to certain stones. An Onondaga in 1753 brought the Moravians to the Seneca river, "where were two stones, which, he said, had once been an Indian who had been petrified, and these were his head and body. They offered sacrifices to him, so that they might catch much fish, and we found tobacco lying there that they had sacrificed." *Zeisberger*, mss

Musical instruments

The drum was as exciting to the Indian's feelings as to those of his civilized successor, though his was a ruder affair and sometimes quite unlike our own. The Jesuits described one used by the Canadian Algonquins, in these words:

This drum is of the bigness of the drum of Basque; it is composed of a ring three or four fingers wide, and of two skins tightly

stretched from the one part and the other; they put within little stones or little pebbles to make more noise; the diameter of the greatest drums is of two hands-breadth or thereabouts; they name it *chichigouan*, and the verb *nipagahiman*. I have played this drum. They do not beat it as our Europeans do; but they turn and shake it, to make the pebbles sound which are within; they strike it on the ground, sometimes on the edge, sometimes as if a dish. *Relation*, 1634

This was properly a kind of rattle, most rattles being used in this way. In the French account of Iroquois customs in 1666, this name is used in describing Indian pictures. "After the animal are the prisoners they have made, with a *chichicois*, (or gourd filled with beans which rattle), in the right hand." *O'Callaghan*, 1: 5

The picture is that of a long-necked gourd, still used as a rattle, and called *gus-da-wa'-sa* by the Senecas. The general Onondaga name is *ka-sta-wen'-sah*, and four kinds are in use. Figure 130 is an Onondaga gourd rattle, 12 inches long. The small end is perforated for suspension, and the opening at the large end is plugged after pebbles have been introduced. This is the kind represented in early pictures, as before mentioned. Figure 131 is another, enlarged from Morgan. Figure 119 is an Onondaga bark rattle, cut in a long piece and doubled over. Over the edges of one half are drawn the edges of the other, forming somewhat of a long triangle, over a foot long, an inch wide at the top and about 4 inches wide at the bottom. Pebbles are placed in this, and the opening is corked up as with the gourd. This is very effective, and is an old form now quite rare. The figure is half the actual length.

Figure 1 is less antique, being an Onondaga rattle made from a cow's horn. It has a long wooden handle which passes through both ends, and which is nearly a foot long. It is supplied with pebbles, as is usual.

Figure 121 shows the usual turtle-shell rattle, reduced to one half the length. This was obtained at Onondaga by the writer, and has an extreme length of $12\frac{3}{4}$ inches. Some are so large as to require both hands. This shell is $6\frac{1}{2}$ inches long and is that of the wood terrapin. The animal is removed, and the head and neck are stretched over a stick which enters the shell. Two hickory splints

reach from the back part of the head, diverging to the central plate on the back. The sharp points penetrate this. On the underside another splint reaches from the lower jaw to the center of the sternum, which it penetrates. Some corn is placed in the cavity, and the orifice is sewed up. Around the splints along the neck a cord is tightly wound. While all these can be shaken like a rattle, they are usually struck against something resonant, as a bench.

Mr Morgan notes one feature of a concert called *o-ee-dose*:

It was given in the night, in a dark room, and no women were allowed to be present. Those engaged in the concert were seated on benches around the room, in a continuous row, each one holding in his hand a rattle. . . . These rattles were made to give each one a different note, by means of different sized shells, and holes bored in them to emit the sound. Among 20 of them, rattled together at such a concert, no two would give the same sound. *Morgan, 1: 277*

The big turtle-shell rattle is used in the Great Feather dance, and in the medicine dance of the False Faces. It is carried by the chief False Face, and its use is laborious, requiring both hands. This is called *keh-nya-ten-go'-nah* by the Onondagas, and *ka-sta-wen'-sa* may be added for rattle. Smaller rattles were also used. The gourd rattle is called *a-e-tot'-hah ka-sta-wen'-sa*, the first word indicating the medicine dance at which it is used. Horn rattles may be used at any dance; but at a condolence or mourning council all the music is vocal.

The drum was quite a different thing and was called *ka-na-ju'-we* by the Onondagas, or covered kettle. Figure 132 is a small Seneca drum, $3\frac{1}{2}$ inches deep and a little more in diameter. This is unusually small. The single drum-head is drawn tightly over the upper end of a wooden bowl. Figure 133 shows one of the drum sticks, elaborately carved. Mr Morgan gives a figure of a larger and more serviceable one, a foot deep and with a stick like our own. It is merely a small hooped keg, furnished with a leather head. This the Senecas call *ga-no-jo'-o*. At Onondaga the big Indian drum is like a large keg, about the diameter of an old-fashioned churn, and is used in the war and fish dances, the annual feast of the dead in the spring etc., but never in the snake dance. Drums of the size

of small paint kegs, and often made of them, are used in many dances.

The flute is called *so-wen-tuk'-wah* by the Onondagas, with a sometimes prefixed. It is often termed the courting flute from its old use. The Senecas term it *ya-o'-da-was-ta*. Figure 52 is taken from Morgan's figure of this. It is $1\frac{1}{2}$ feet long, and his account follows:

This instrument is unlike any known among us, but it clearly resembles the clarionet. Its name signifies "a blowpipe." It is usually made of red cedar, is about 18 inches in length, and above an inch in diameter. The finger-holes, six in number, are equidistant. Between them and the mouthpiece, which is at the end, is the whistle, contrived much upon the same principle as the common whistle. It makes six consecutive notes, from the lowest, on a rising scale. The seventh note is wanting, but the three or four next above are regularly made. This is the whole compass of the instrument. As played by the Indians, it affords a species of wild and plaintive music. *Morgan, 2: 38*

This is now rare at Onondaga, though in use not long since. One examined there was as described above. There was a raised part between the mouthpiece and the hole below, and there were nice bands of lead. The lover used to play a jew's-harp to call the maiden out. A mouth organ is now used.

Figure 115 is a cylindric bamboo whistle, once belonging to Captain George of the Onondaga reservation, and used by him in the annual medicine-making. There is an opening a third of the way from the mouth, and two adjustable pieces are slipped back and forth, over this and under the strings, to get the desired pitch.

When Bishop Spangenberg was at Onondaga in 1745, he noted that "the Indians paraded through the town to the music of a couple of violins, flutes and a drum; and also around the house where we lodged." Violins are now forbidden.

Hunting

Besides their archery the Indians had other devices for taking game, using snares, traps and pounds. Wild pigeons were found in such vast numbers that long poles alone were required to take the young. Bruyas defined *gannhi* as "a great stick with which they

strike the nests of the pigeons." *Ata* was "a little bark or dry wood to serve for torches in the hunt for pigeons during the night." Not 50 years ago the Onondagas fastened pieces of hickory bark on long poles, lit them, and poked down pigeon nests by the light. There are vivid accounts of these scenes.

Snares and traps were common; and the Onondagas call all those for game, *ki-yen'-ton*. Bruyas gives *agarion*, "to make traps for hares;" *askôton*, "to make traps for beaver, bear, etc." These are Mohawk words. Roger Williams gives some of the Algonquin, as *ape' hana*, trap or traps; *wuskape'hana*, new traps, etc. He says: "They hunt by Traps of severall sorts. . . Each man takes his bounds of two, three, or foure miles, where hee sets thirty, forty, or fiftie Traps, and baits his Traps with that food the Deere loves, and once in two dayes he walks his round to view his Traps." *Williams*, ch.27

Sometimes a wolf devoured the deer. "Upon this the *Indian* makes a falling trap called *Sunnuckhig*, (with a great weight of stones) and so sometimes knocks the wolf on the head."

In Turner's *Holland Purchase* mention is made that the Senecas caught wolves in pits, hanging a bait over them from a sapling. This seems doubtful with so agile an animal, but is a pioneer's story. The true account is probably that given by the Onondagas. They bent over saplings with baited nooses attached and also made deadfalls of loaded logs.

In one of Champlain's pictures a wolf and deer appear thus caught, hanging in the air. Mr Morgan speaks of the same thing, and mentions other devices:

✓ *Net*s of bark twine were also spread for pigeons and quails. A simple bird trap for small birds consists of a rounding strip of elm bark about 8 inches long by 4 wide, with an eye cut in one end and a piece of bark twine with a noose at the end of it, attached to the other. After the bark is secured upon the ground, a few kernels of corn are dropped through the eye upon the ground, and a noose adjusted around it. When a bird attempts to pick up the corn the ruffled plumage of the neck takes up the string, and brings the noose around the neck, which is tightened the moment the bird attempts to fly. *Morgan*, 2:24

Figure 123 shows this snare. Van der Donck mentioned a snare for taking turkeys:

The Indians take many in snares, when the weather changes in winter. Then they lay bulbous roots, which the turkeys are fond of, in the small rills and streams of water; which the birds take up, when they are ensnared and held until the artful Indian takes up the turkey as his prize. *Van der Donck*, 5: 172

The mode of driving deer between lines of stakes and brush, into a pound or narrow opening, has been often described. The town of Poundridge N. Y. was called after a deer pound of this kind, situated at the foot of a high ridge south of the village of that name. David Cusick described the same thing: "They make a long brush fence and remove the leaves on both sides of the fence, the deer will follow the path; the person can easily kill the game." *Beauchamp*, p.35

Champlain gave both a picture and description of this mode of hunting as he saw it in the Huron country in the winter of 1615-16, but the work must have been great if his estimates are correct. He said:

They went into the woods, near a little forest of fir-trees, where they made an enclosure in the form of a triangle, closed on two sides, open on one. This enclosure was made of great palisades of wood crowded together, of the height of 8 to 9 feet, & in length about 1500 paces on each side, at the end of which triangle was a small enclosure which continually contracts, covered in part by branches. . . . They go into the woods about half a league from the said enclosure, separated one from another about 80 paces, each having two sticks which they strike together, marching slowly in this order till they arrive at the enclosure. *Champlain*, 2: 538-39

Then the deer are driven through the converging lines into the pound. The branches keep them from leaping out there, and all are killed. In the Iroquois country deer were so abundant that this was not used, and it seems to have been confined here to the south-eastern part of the State. A large, deep and almost circular depression near Unadilla may have served for such a pound. Near the pond in the center stone walls have been thrown up, as though to shelter hunters, and a graded way from above leads to these.

Games

Two or three games were played by most of our aborigines, east and west, but with modifications. Some may be briefly noticed. Among these the Iroquois game of the deer buttons or bones hardly has a place in speaking of the uses of wood, and its mention will be brief. It is more fully treated in the writer's paper on Iroquois games, *Journal of American Folk-Lore* for 1896.

It is a fireside game in which eight bone buttons are used, about an inch in diameter and blackened or spotted on one side. No dish is used, but the buttons are scattered with the hand. From this comes the Onondaga name, *ta-you-nyun-wat'-hah*, or finger-shaker. The Senecas call it *gus-ga-e-sa'-ta*. Two white or two black count two, called *o-yu'-ah*, or the bird, Seven white or black count four, called *o-neo'-sah*, or pumpkin. All white or black gain 20, called *o-hen'-tah*, or a field. *Beauchamp*, 9: 269

This seems to have been formerly played with fruit stones, as another noted game always has been. The latter has a public character and was of high esteem centuries ago. Brébeuf vividly described the game played among the Hurons in 1636, when it was known as that of the dish, because the six peach stones were always shaken in this. Hence the Onondagas call it *ta-yune-oo-wah'-es*, throwing the bowl to each other. Figure 134 shows *kah-oon'-wah*, the bowl, and figure 136 the peach stones. The bowl is that used by the writer, and was made by the chief Ossahinta, nearly a century ago. It is 11 inches across the top, 3 inches deep, and was carved out of a hard knot. The stones have each a white and black side. Five count a bird and six a field, with no lower counts. Morgan called the game *gus-ka'-eh*, and gave a good description.

The Seneca bowl, figured by Morgan, was about the same size and form as the Onondaga one represented. Figure 135 is another Seneca bowl, belonging to J. N. B. Hewitt of Washington D. C., with the peach stones in place. This is but $9\frac{3}{8}$ inches wide, and differs from the usual form. Two players place the bowl between them, striking it on the ground or floor. Each plays till he loses, and, when he has exhausted his allotted means, another from the same side takes his place.

Counting sticks have never been mentioned among the Iroquois, and it was not till the summer of 1902 that the writer met with them at Onondaga, connected with the peach stone game. Figure 128 gives two views of one of these, having the base and expanded head painted red. There are several of this form, and with each set goes another, formed like a snake and mottled all over. Figure 129 shows one of these, of the same size as the rest.

Mr Stewart Culin, in his interesting monograph, *Chess and Playing Cards*, describes some counting sticks. Those of the Dakotas and Blackfeet have little resemblance to those of Onondaga, but some from Maine and New Brunswick have a distinct likeness and vary from 5 inches to 8½ inches in length. Some are plain sticks; others are notched in various ways, or have the undulating serpent form. He figured some from the Micmac Indians of Nova Scotia, who used them with the game of the bowl. Of these it is said:

There are 55 counting sticks—51 plain rounded ones about 7½ inches long, a king pin, shaped like the forward half of an arrow, and three notched sticks, each presenting half of the rear end of an arrow. These last four are about 8 inches long. Three of the plain sticks form a count of one point, the notched sticks have a value of five points, while the king pin varies in value, being used as 52d plain stick, except when it stands alone in the general pile; then it has, like the notched sticks, a value of five points. *Culin*, p.698

In this a woman “keeps the score on the counting sticks, which at first lie together.” The Micmacs of New Brunswick use 48 plain sticks and four larger ones. One of these has five serrations on one side, and two have four. The fourth stick is undulated. *Culin*, p.704

Some other Micmac sticks differed a little. The Passamaquoddy Indians had 48 small sticks, nearly 5 inches long, four larger, and one notched. The Penobscots used 55 cedar sticks, 51 being plain and rounded, three flat, and one of a zigzag form. All were about 6 inches long. *Culin*, p.709

Another general and popular game was that of straws, not unlike that of jackstraws, but never mastered by a white man. It has

often been described, but the Algonquins cared more for it than the Iroquois. Charlevoix gave a brief account of this:

These straws are small rushes of the thickness of a stalk of wheat and two fingers in length. They take up a parcel of these in their hand, which generally consists of 201, and always of an unequal number. After they have well stirred them . . . they divide them, with a kind of sharp bone or awl into parcels of ten; each takes one at a venture, and he to whom the parcel with eleven in it falls gains a certain number of points according to the agreement. *Charlevoix, 2: 102*

The game of the snow snake, called *ka-when'-tah* by the Onondagas and *ga-wa'-sa* by the Senecas, is not mentioned by any early writer, and yet seems purely Iroquois in character. It is almost unknown outside of the reservations. The implement is a slender rod, from 5 to 7 feet long, and has an upturned head loaded with lead. Figure 138 shows this part from one belonging to the writer. The lead is run into grooves, and the head is blackened by the heat. Originally no metal was used. The long shaft bends as it runs over the ice or snow, suggesting its common name. The Seneca form is flatter and thinner than the Onondaga. Figure 137 shows the whole article. The game is to throw the farthest, and there may be single contests or sides may be chosen. There is a notch in the thinner end, in which the forefinger is placed, the implement being sustained by the rest of the hand till thrown. Under favorable circumstances it may glide on snow or ice from 60 to 80 rods. Figure 140, *a* and *b*, shows the small end vertically and horizontally. Figure 139 is from the center, on which the maker placed a date. Figure 151 is a group of young Onondagas with their snow snakes. Western Indians sometimes throw unbent bows in the same way.

Mr Morgan described another winter game which the writer has not seen at Onondaga, but which old men vaguely recall there. It is called *da-ya-no-ia-yen-da-qua* by the Senecas, or the snow boat. This article was about 15 inches long and made of beech or other hard wood. The form was that of a canoe, pointed at both ends and slightly upturned at one. In the center was an elliptic excavation, and a small bow might be placed over this, with bells or rattles suspended. A white feather in the stern served as a flag and per-

haps aided in steering it. The game was a race down a hill ending in an open plain. Trenches were made in the snow and water was applied to form ice. The trenches were about a foot wide and equaled the players in number. Four clans were arrayed against the other four at the base of the hill, their champions taking their boats to the top. These were coated with ice and started down their tracks, which were from two to a dozen in number. Each player had two or three boats, a count being allowed for each till the score was made. Figure 34 shows a boat of this kind. *Morgan*, 1:294

The Onondagas use a bark sled on which a boy rides standing, as in figure 68. The bark is cut in a long triangle, a notch being made in each side of the narrow end, to which a bark rope is tied. This draws it up and backward, much like a toboggan but not curling over. The boy holds the rope in his hand, standing on the broad end of the bark, and thus slides down hill. Each strives to go farthest and swiftest.

Lacrosse is one of the finest of ball games, and was played by all Indians east of the Rocky mountains. Two poles were placed as gateways at each end of the ground, the one party trying to carry or drive the ball through its opponent's gate, and the other to prevent this. The ball was originally made from a knot of wood, but now one of leather is used. The bat is a bow of hickory, bent somewhat like a fishhook and partly equipped with a netting of sinews. The bend is cut so that it may readily slide under the ball and pick it from the ground. It is then borne on the network or thrown from it, as need requires. Figure 118 shows the bat, 64 inches long and 10 broad. When the two sides are ready, a player from each meet in the center of the field, placing one bat over the other, with the ball on it. At a signal it is thrown in the air, and the contest begins. It must not be touched with the hand, and, if it falls to the ground, the bat must slip under and raise it again. When a dozen are trying to do this, there are lively times. Its name is *ka-che-kwā-ah'*.

Another ball game has been described by the writer alone. It seems derived from base ball, having a pitcher and batter, bases and

field men, but it differs in many respects. As it certainly is not aboriginal, it will not be described here. It is an Onondaga game, and the writer has illustrated it with a diagram. *Beauchamp*, 8: 213

False Faces

The first mention of wooden masks near New York was among the Hurons of Canada. In a dance to drive away a pestilence, "all the dancers were counterfeits of hunchbacks, with wooden masks, the whole ridiculously made, and each a staff in hand; behold an excellent medicine. At the end of the dance, at the order of the sorcerer *Tsondacoïane*', all the masks were hung at the top of a pole at the top of each cabin, with the straw men at the doors." *Relation*, 1637. The next night they hung "the wooden masks and straw men above each cabin." At another time they put "a sack on the head, pierced only at the eyes."

Masks seem to have been rare among the early Iroquois, but Lamberville mentions "a masquerade of people dressed like bears" at Onondaga in 1676. At another dance, on the same occasion, "the guests were covered with feathers from their heads to their feet, and were all masked;" but there is no hint of what the masks were like.

In 1687 Beschefer went with De Nonville in the Seneca invasion, and wrote to Villermont:

I was mistaken when I told you that the Iroquois wore no masks. They make some very hideous ones with pieces of wood, which they carve according to their fancy. When our people burned the villages of the Tsonnontouans, a young man made every effort in his power to get one that an Outaouae had found in a cabin, but the latter would not part with it. It was a foot and a half long, and wide in proportion. Two pieces of a kettle, very neatly fitted to it and pierced with a small hole in the center, represented the eyes. *Relation*, 1687

These are the only allusions to wooden masks in New York in the 17th century, and from the tone of the last it may be inferred that those at Onondaga were not of wood. The Senecas had one town of Hurons, and these may have introduced wooden masks among them. At the New Year's feast of 1656 they are not men-

tioned, though now a leading feature of that great festival. John Bartram saw them at Onondaga in 1743. At night:

We were entertained by a comical fellow, disguised in as odd a dress as *Indian* folly could invent; he had on a clumsy vizard of wood colour'd black, with a nose 4 or 5 inches long, a grining mouth set awry, furnish'd with long teeth, round the eyes circles of bright brass, surrounded by a larger circle of white paint, from his forehead hung long tresses of buffaloes hair, and from the catch part of his head ropes made of the plated husks of *Indian* corn; I cannot recollect the whole of his dress, but that it was equally uncouth; he carried in one hand a long staff, in the other a calabash with small stones in it for a rattle, and this he rubbed up and down his staff. . . . In my whim I saw a vizard of this kind hang by the side of one of their cabins to another town. *Bartram*, p.43

It is a little remarkable that these two descriptions might be used for Iroquois wooden masks of today, and that probably every feature mentioned belonged to the first one used here. After the Revolution they were often mentioned, and certainly increased in number and importance. The wearers have now official duties, some of which formerly belonged to the chiefs. David Cusick said: "They have a certain time of worship: the false faces first commence the dances; they visit the houses to drive away sickness, etc." *Beauchamp*, p.30

To the fact that the early missionaries found no public use of masks here, and for a long time knew of none in New York made of wood, we may add that Bruyas records no Mohawk word meaning a mask, or referring to its use. We may therefore conclude that it came into New York late in the 17th century, and that the Senecas used it first of all. Most changes came through the symbolic doors of the Konosioni; civilized influences through the Mohawks, and savage through the Senecas. Of this there are many proofs. On this point the opinion of Mr William H. Dall may be cited:

It will be observed that, while the association of the mask with a spiritual being, and an implied connection between the action of that being upon a third party with the wearing, by a devotee of the supposed spirit, of a mask symbolizing the latter, and, in general, the invocation of spirits for medical purposes, are features common

to wearers of masks among savage peoples everywhere, yet the details of the origin and symbolism of the Iroquois masks is quite different from anything reported from the coast of northwest America. Moreover, it appears to be certain that the use of masks among the people of the Mississippi basin and the Atlantic watershed was rare, and formed no prominent feature of their festivals or customs. *Dall*, 3: 145

Many accounts of the False Faces as a society have appeared, but Morgan's was the first and covered most points. There were early stories of bodiless flying heads, of whom the masks were representatives. These had wonderful powers, and on these were based that secret organization found now in every Iroquois village. Morgan said:

This society has a species of initiation and regular forms, ceremonies and dances. . . . If any one dreamed he was a False Face, it was only necessary to signify his dream to the proper person, and give a feast, to be at once initiated; and so any one dreaming that he had ceased to be a False Face, had but to make known his dream and give a similar entertainment to effect his exodus. In no other way could a membership be acquired or surrendered. Upon all occasions on which the members appeared in character they wore false faces of the kind represented in the figure, the masks being diversified in color, style and configuration, but all agreeing in their equally hideous appearance. The members were all males save one, who was a female, and the Mistress of the Band. She was called *Ga-go-sā Ho-nun-nas-tase-ta*, or the keeper of the False Faces; and not only had charge of the regalia of the band, but was the only organ of communication with the members, for their names continued unknown. The prime motive in the establishment of this organization was to propitiate those demons called False Faces, and among other good results to arrest pestilence and disease. In course of time the band itself was believed to have a species of control over diseases. . . . When any one was sick with a complaint within the range of their healing powers, and dreamed that he saw a False Face, this was interpreted to signify that through their instrumentality he was to be cured. Having informed the mistress of the band, and prepared the customary feast, the False Faces at once appeared, preceded by their female leader, and marching in Indian file. Each one wore a mask or false face, a tattered blanket over his shoulders, and carried a turtle-shell rattle in his hand. On entering the house of the invalid, they first stirred the ashes upon the hearth, and then sprinkled the patient over with hot ashes until his head and hair were covered; after which, they performed some

manipulations over him in turn, and finally led him around with them in the false face dance (*gā-go-sā*), with which their ceremonies concluded. *Morgan*, 2: 158

This relates to the Seneca False Faces. In Onondaga a mask is called *ka-kone'-sah*, or a face, the adjective not appearing. Mr De Cost Smith gives the harder sound, *ga-gw^u'-sa*, in his excellent article on this subject in the first volume of the *Journal of American Folk-Lore*. This is well illustrated, is fuller than anything yet written and is thoroughly reliable. After those whom they represent, the Onondaga False Faces are also called *Hat-do'-ī*, or *Hoⁿ-do'-ī*, usually the former, the latter being the plural. Mr Smith had fine opportunities for continuous observation and study at Onondaga, and made a good collection of masks there, one of which he gave to the writer.

At that place the False Faces appear on several occasions. Everywhere they have had a prominent part in the New Year's feast. In connection with that, but a little later, they visit all houses adhering to the old faith. The writer met them on this annual round, Jan. 29, 1896, and got a picture of part of the troop. There seemed more fun than religion in their proceedings as they went from house to house. The first one had a piazza, and on the floor of this they struck with their rattles, and occasionally on the door. Then they knelt down and beat again, while one entered the house. The door again opened, and all entered, crawling on their hands and knees and beating with their rattles. The leader had already danced around in the house, putting ashes on the heads of the inmates, crying "Hoh!" as he did so. Then the rest came in and danced around, taking up ashes in the double hand, putting them on the head by blowing, with a puff. Then they took up the inmates in chairs, a man on each side, and danced around with them. Pounded parched corn was given them to eat in the house, and some food was placed in their basket. Then they went to another house.

This probably differs much from the earlier and more serious visitation, but this was the Onondaga custom in 1896.

There are some things about the False Faces which have never been published. The large wooden masks are well known, but in

Onondaga houses small ones are often seen. These are for children. When a child is sick, the aid of the False Faces may be asked; and, if it recovers, a small wooden mask is made, which it keeps, and which is to aid it in future trials. This is called *ho-yah-dah-nuh'-na*, an assistant. Small stone masks were sometimes used as tokens of membership. At the more important dances from two to four wear husk masks, called *kah-je'-sah*. Their duty is that of door-keepers or policemen. They are to suffer none to go out during the dance, but a plug of tobacco usually opens the door.

The False Faces throw ashes. Another medicine society is composed mostly of women. These sprinkle water over the sick with corn husks, and are called *Wat-nā-ko-ah'-gue*, Throwing water at each other. There is still another, the members of which take water in the mouth and spurt it over the sick in the ancient way.

The masks themselves are supposed to have each its own spirit, and these must have due attention. If long neglected, they make trouble. They should attend dances when possible; at least be taken out and talked to from time to time. Tobacco pleases all spirits, and a little bag of this tied to a mask keeps it good-natured. Such a bag was tied to one owned by the writer, and it was a very quiet mask, though not canny in its looks. This tobacco should be of the native species, *Nicotiana rustica*, having a yellow flower. The writer has grown this.

In a second article on Onondaga demonology Mr Smith added some particulars, and among them the following, which owners of masks should heed: "When masks are not in use, they are laid away, out of sight, face downward. Leaving them with the face up, like a corpse, thus intimating that they are dead, would displease the *Hoⁿ-do'-i*, while, if hung up with the face out, they will be noisy at night and cause trouble." *Smith*, 2: 280

David Boyle found that there were two False Face societies among the Six Nations of Canada, one being well known and the other secret. He calls the society *Ah-k'on-wa-rah*, and gives rules for admission quite different from those found in New York. This depends on proper qualifications, and not on a dream. According to him the initiation is very simple. *Boyle*, 1898, p.158

In both the papers mentioned are some of the curious stories connected with these masks and their supposed originals, such as trials of strength, the twisted mouth, the husk masks and other like things. These have nothing to do with their use and will be omitted here, for they open up the whole subject of the extravagant or beautiful tales of the Iroquois. The writer has had from the Onondagas the same stories which Boyle and Smith record.

Neither of the writers mentioned met with masks which he had any reason to think 100 years old. On the contrary, Mrs Harriet Maxwell Converse found some to which she ascribed a great age, apparently from their rude character and worn appearance. Due weight should be given to all such evidence, but it is uncertain because affected by the skill of the maker and the care of the owner. Traditions of age are also of little value, though not to be disregarded. In Indian history there is no more uncertain element than time. On the whole, it seems probable that wooden masks were first used in New York in the last half of the 17th century, and apparently not then in public ceremonies. They certainly were not used in the New Year's feast in 1656 at Onondaga.

As might be expected, the Senecas attach to masks many meanings which are not found elsewhere. Mrs Converse found among them some of which the Onondagas know little or nothing. This seems the case in Canada. Any society of False Faces would partially develop its own ritual and symbols, and, in studying these, Mrs Converse had the advantage of adoption by the Senecas and membership in a medicine society. In procuring the valuable collection of masks which she made for the State Museum, possession of the article was subordinated to the question of its use. What did it mean? How and when was it used?

The answers will not be uniform, for ceremonies and meanings vary. In a New York newspaper of 1899, Mrs Converse describes corn husk, night, laughing, wind, winter and summer, war and scalp, good and evil, bird, fish and game, medicine or doctor, exorciser, clan, small and large maternity, and women masks, and adds: "These are but a few of the varieties of the Iroquois masks, but they serve as illustrations of the service." The names of the 10 masks

illustrating her paper are the cornhusk or doorkeeper's, Canadian beggar, exorciser or witch, laughing, dancing buffalo, maternity with small mask, mystery, wolf, guardian of the harvest, and big breath or wind masks. Her accounts of these are of great poetic interest at least. She adds:

Among the Iroquois of today there are several mask carvers, but these fail to reproduce the singular features of the ancient mask. Their delineations are grotesque only, and the old art of mask carving has passed away with the passing Iroquois. There are but few of the old masks left, and the State Museum has secured the largest numbers of these old relics of the Iroquois carvings. *Converse*

Wooden masks are made of basswood, often termed whitewood by early writers. This cuts easily in the spring, and one Onondaga does a thriving business in making them. There are several leading types, and, to illustrate one tradition, some have the mouth awry. Modern features are moustaches and projections on the forehead, mouth and nose.

Cornhusk masks are braided very smoothly as far as the face goes, and around this some coarse and loose ends project to represent hair. These are worn by doorkeepers.

Mr Boyle said that the common False Face society is not a secret one in Canada, nor is there much reason for calling it such in New York. Certainly the members are well known. Mr Boyle adds: "The fiction is maintained of having two women to act as mediums of communication between the society and outsiders, but these women are only the cooks of the feast."

While those who wear the corn husk masks are only doorkeepers in New York, in Canada they form a society of 30 persons, the invisible corn husk people numbering the same. The society differs from that of the False Faces, meeting thrice a year and using cold water instead of ashes. The number is always maintained. But one person at a time is able to see the original corn husk people, and this power is confined to one family. The society is called Ra-tsisa, and the leader's title is Sha-gon-na-den-ha-weh. *Boyle, 1898, p.163*

Farther details of use and meaning may be omitted for the present, as this paper deals more with the material than the psychic features

of these grotesque objects. Some reference to the latter seemed proper, but this will now give place to a brief account of the general character of these masks, and the description of a few examples. In general, they have not been highly valued. Mr De Cost Smith got a large collection at Onondaga at a small cost and with little effort. The State Museum has over 100 examples, and they are found in other collections. They rarely lack the metallic circles for eyes and have two or three strings to attach them to the head. Long horsehair is quite commonly used, and till quite recently they were usually painted with Indian red. In a few instances the tongue protrudes, and in many there is an attempt to represent teeth. The very broad lips and those puckered and pointed seem a recent idea. With rare exceptions the character is grotesque. Two Onondaga masks figured by Mr Smith had projecting lips, and their owners thought they were respectively made about 1860 and 1870. Other forms were supposed to be a century old.

Figures are given of a few masks, illustrating some of the principal types. Two of these are made of corn husks, and these are worn by the doorkeepers. Figure 145 is the largest of these and is woven so that the loose ends of husks represent hair. Figure 146 is a little smaller and has no loose ends. Both are very ingeniously woven.

Figure 141 is of wood, as are the three following. Its dimensions are $6\frac{1}{2}$ by $11\frac{1}{2}$ inches, and it has a curiously formed projecting mouth, much resembling some Japanese masks. Its modern character will be seen at a glance. Figure 142 is one of the so called maternity masks, having a very small mask attached. The expanding lips form a common feature. The dimensions are 6 by 10 inches. Figure 143 shows one of the more frequent forms, the size being $5\frac{1}{2}$ by 9 inches. Figure 144 has the mouth awry, in conformity with one of the legends. This is 6 by 10 inches. Three of these are adorned with horsehair, but this feature is often lacking.

Figure 147 is from a small photograph of part of a group on the annual round at Onondaga, Jan. 29, 1896. They were on a slow run in the snow. Figure 148 is from Mr De Cost Smith's sketch of

a False Face in dancing costume, made at the Onondaga council house, Jan. 14, 1888. He holds the customary staff and turtle-shell rattle used in dancing. In dressing for the occasion nothing comes amiss which can make the costume fantastic or hideous. Tin pans or other vessels are sometimes stuffed under the clothing, as may be seen in some of these figures, and like distortions of the figure date back to early days. The dances and ceremonies form another subject.

Miscellaneous

As a rule, a New York Indian troubled himself little about bridges. A good swimmer, he easily crossed any ordinary stream, and usually had little care about wetting his clothes. When he wished to spare these, a tree fallen across the stream often gave him safe passage. The women, arrayed in their finery, wanted something better, and bridges were built. Cammerhoff's journal of June 29, 1750, speaks of one near Lake Onnachee or Canandaigua:

We continued on our way to Lake Onnachee, passing along its shores to its outlet, where it is crossed by an Indian bridge. This was the first of this kind that we had seen. It was constructed on stakes, driven into the ground and bound together by bark, and on these small trees and poles had been laid, over which we were obliged to walk, a very dangerous proceeding. *Cammerhoff*, mss

There was also a bridge at Onondaga in 1752, a graded way leading from the fort to the water a few years later. It was much out of repair, and Zeisberger said:

Otschinachiatha begged us to mend the bridge across the creek; most of them had their plantations over there, and when the women carried their corn across, they were always in danger of falling into the water; we promised to do it . . . Saturday, Sept. 22nd. We repaired the bridge for the Indians who called out many a "Niarwo." The whole town rejoiced to have a good bridge, particularly the old people. *Zeisberger*, mss

Their rude agriculture may often have required protection, but of this we know but little. Loskiel tells us that "their plantations are surrounded with high fences, chiefly to keep off the horses, which feed in the woods without a keeper;" and the Moravian missionaries found it inconvenient to take horses among the Iroquois,

because they damaged defenseless fields. When John Bartram passed the small Onondaga village of *Tu-e-yah-das'-soo*, in 1743, he saw appletrees full of fruit. "The *Indians* had set long bushes all round the trees at a little distance, I suppose to keep the small children from stealing the fruit before they were ripe."

Roger Williams is singular in what he says of the depredations of birds: "They put up little watch-houses in the middle of their fields, in which they, or their biggest children lodge, and earely in the morning prevent the Birds." *Williams*, ch.15

The same author said: "The *Indian Women* to this day (notwithstanding our *Howes*) doe use their naturall *Howes* of shells and Wood." Of these he mentioned "A breaking up *How*," and "A weeding or broad *How*," with their Indian names. Bruyas gave *onarate* as the Mohawk word for wooden hoe. It may have been of one piece.

A good deal of maize was shelled, charred, and placed in pits, lined with bark, and this was a general custom. *Asaton* was the Mohawk word for making a cache, and open ones are still frequent but reduced in size. Occasionally one is found filled with grain, and figure 105 shows some of this charred corn, perhaps 400 years old.

Bruyas alone took notice of one use of fuel in New York, which yet may have been frequent in suitable places. *Gaiengouaroutanni* meant to give a signal by the smoke of a fire made on purpose for this. He also mentioned a shuttle, but did not say whether it was of wood or bone. Something of this kind was also used in a child's game.

He also recorded *gaionwe* as the Mohawk word for "a willow hurdle for drying anything," without further description. Four crotched sticks were placed in the ground, forming a rectangle and connected by horizontal rods. On these cross sticks were thickly laid, and on these fish, or other things requiring to be smoked or dried, were placed. For smoking a slow fire was kept up underneath. This was the custom in Canada and the eastern United States, and huckleberries were dried in a similar way.

Picture writing has been mentioned, and a rude map drawing was in use. Champlain spoke of this in 1605, for the Indians of New England drew quite well, with charcoal, the capes, bays and mouths of rivers along the Atlantic coast. Lafitau said that the northeastern Indians drew rude but accurate maps on bark or on the sand. The former were kept in the public treasury for times of need.

In 1759 Sir William Johnson gave General Gage a draft of the St Lawrence river made by Red Head, an Onondaga. Other instances might be cited of a very primitive kind, but the most curious was that seen by Van Curler at Oneida, in 1634:

We asked them all sorts of questions about their castles and their names, and how far they were away from each other. They showed us with stones and maize cakes, and Jeronimus then made a chart of it. And we counted all in miles how far each village was away from the next. *Wilson*, p.94

Champlain said of an Ottawa chief in 1615, "I conversed with him about what belonged to his country, which he drew for me with a coal on a bark of a tree."

Many accounts might be quoted of the sweating-house and of the lodge used by conjurers. That of the latter by John Bartram, when passing through Tioga county in 1743, will suffice:

They cut a parcel of poles, which they stick in the ground in a circle, about the bigness of hop poles, the circle about five foot diameter, and then bring them together at the top, and tie them in form of an oven, where the conjurer placeth himself; then his assistants cover the cage over close with blankets, and to make it still more suffocating, hot stones are rolled in. . . . There is usually a stake drove into the ground about four foot high and pointed. . . . I have seen many of these places in my travels. They differ from their sweating coops, in that they are often far from water, and have a stake by the cage, yet both have a heap of red hot stones put in. *Bartram*, p.32

At the same time this author described the cooking of eels:

Their way of roasting eels is thus; they cut a stick about three foot long, and as thick as one's thumb, they split it about a foot down, and when the eel is gutted, they coil it between the two sides of the stick, and bind the top close, which keeps the eel flat, and stick one end in the ground before a good fire. *Bartram*, p.33

One universal Indian remedy for ill health was the sweating-house, already mentioned. Another was vomiting, and songs, dances and charms were largely employed, but they had many good vegetable remedies. The fruits of trees will not be noticed here, nor the use of herbaceous plants, but some reference to the use of wood and bark may not be out of place. Loskiel and Kalm have described most of these.

The first mention of one of these remedies was by Cartier, when spending the winter of 1535-36 at Quebec. His crew were smitten by the scurvy, a disease to which the Indians there were also subject. One of these told him of a remedy, and two women brought him several branches of a very large tree. He was "to boil the bark and the leaves; to drink of the liquor every other day; and to put the dregs on the legs of the sick." This was effectual, and Cartier was extravagant in its praise.

This tree the Indians called *haneda* or *ameda*. Hakluyt thought it the sassafras, and Schoolcraft the box elder. Oddly enough Champlain called it an herb. Belknap properly said it was an evergreen, having leaves in the winter, adding:

I am inclined to think that it was the spruce pine (*Pinus canadensis*), which is used in the same manner by the Indians, and such as have learned of them. Spruce beer is well known to be a powerful anti-scorbutic; and the bark of this and the white pine serves as a cataplasm for wounds and sores. *Belknap, p.47*

Pinus canadensis of Linnaeus is the hemlock spruce, and Morgan shared in this opinion, which seems correct for another reason. The Onondaga name for this tree is *o-nē-tah*, the common Iroquois term, and it was the Iroquois language which Cartier heard most on the St Lawrence, the names closely corresponding.

Loskiel described several vegetable remedies, and among them some obtained from trees. A decoction of the buds or bark of the white ash was taken to cure a rattlesnake bite:

A decoction of the roots and bark of the thorny ash (*Aralia spinosa*) is used as a purifier of the blood. The Toothach-tree (*Zanthoxylum clava Herculis*) resembles the ash, and is thus called, because the Indians use its wood as a remedy against tooth-ach.

Some thought the fruit of the tulip tree and the bark of its roots a cure for fever and ague. Many considered the flowering dogwood equal to Peruvian bark. Some made a medicinal draught from wild laurel wood. Sassafras was in high esteem, both bark and roots being used. "The flowers serve for tea, and the Indians also use the berries as a medicine." A decoction of the wood or buds of the common elder was also "an excellent remedy in agues, and the Indians use it likewise for inflammations."

The root of the sassafras has been largely used for its aromatic oil. The leaves are variable, "oval and entire, or mitten-shaped, or 3-lobed to about the middle and often as wide as long." It was thus described by the French at Onondaga in 1657:

The most common plant and the most marvellous of these countries, is that which we call the universal plant, because its leaves bruised close up in a short time all kinds of wounds; these leaves of the size of the hand have the figure of the lily painted on armor, and its roots have the odor of the laurel tree. *Relation, 1657*

Conclusion

It is every way probable that the aborigines had many useful or ornamental articles of wood or of vegetable materials of which we have little idea. Some were laid aside when the more attractive ornaments of the white man met the eye. Nearly all have perished, and many were never mentioned by early observers. A knowledge that some existed has been preserved by mere words in early vocabularies, but there is little reason to doubt that some things known to us in stone and bone had their counterparts in wood. Who has seen in New York a wooden bead, or hoe, or shield? Yet all were in use 300 years ago. That many other common things perished with them, there is no reason to doubt. No trace remains of the grotesque house carvings of the Iroquois, and few of their ingenious appliances in everyday life. The skill shown in some gives us a hint of how skillfully every forest need was met in the abundant supplies of a broad forest land.



EXPLANATIONS OF PLATES

Plate 1

- 1 Horn rattle. A recent form used at the Onondaga reservation
- 2 Snowshoe used by the Onondagas and representing the common form
- 3 Bow as still made by the Onondagas and probably retaining the early character
- 4 *a*=blunt arrow, still used by all the Iroquois; *b*, *d*=common arrows, but rarer than the preceding; *c*=arrow tipped with horn, now a rare form, but frequent in early days
- 5 Fire drill with the bow. The usual primitive implement among the Iroquois for making fire
- 6 Arrow with two feathers, as used by the Onondagas
- 7 Arrow with one feather, among the same people
- 8 Feather prepared for binding on the shaft

Plate 1

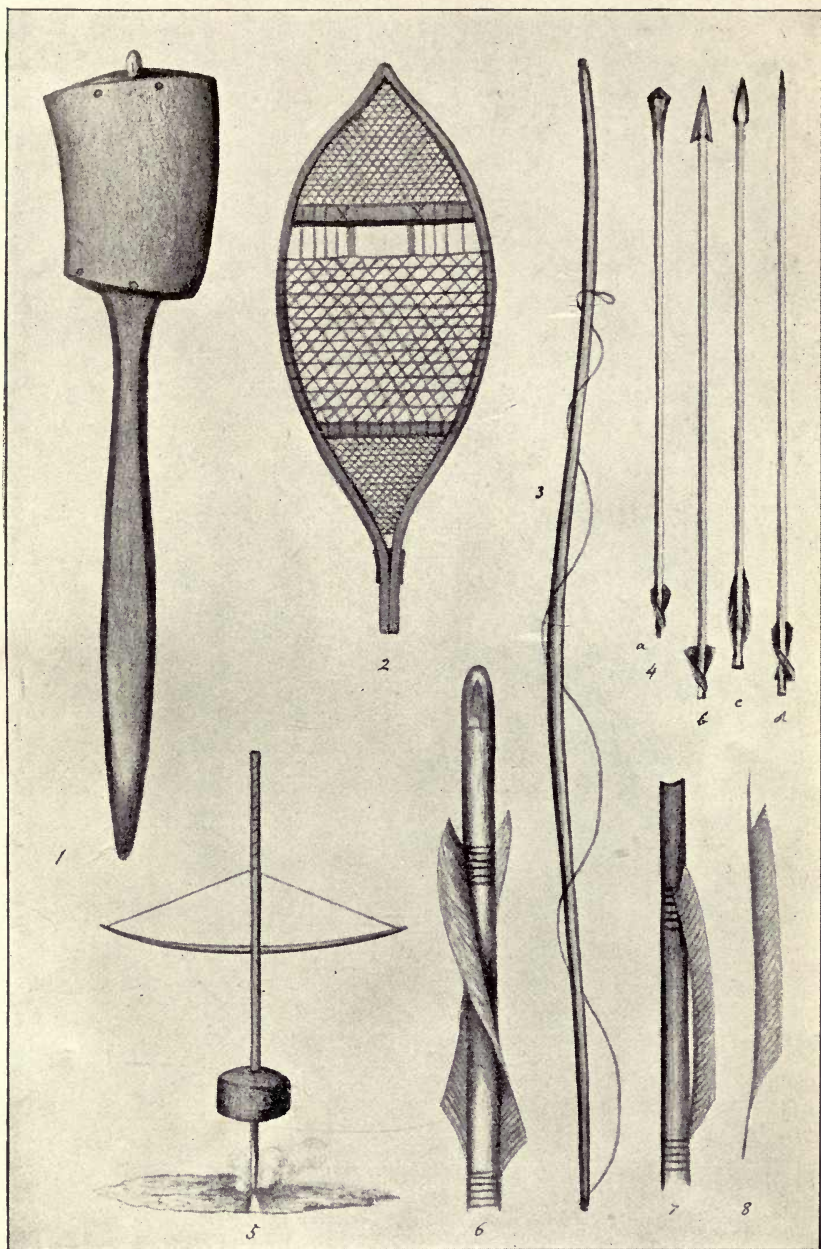




Plate 2

- 9 *a*=Bartram's plan of the Onondaga council house, made at his visit there in 1743, and showing the chambers and passage between;
b=elevation of the same, showing the roof and upper chamber
- 10 Elevation of triple palisade with parapet, from early descriptions and recent explorations
- 11 Inner view of this palisade, showing the alternate posts
- 12 Elevation of double palisade with logs at the base, as described by Van der Donck
- 13 Simple triple palisade, before adding breastworks or parapets

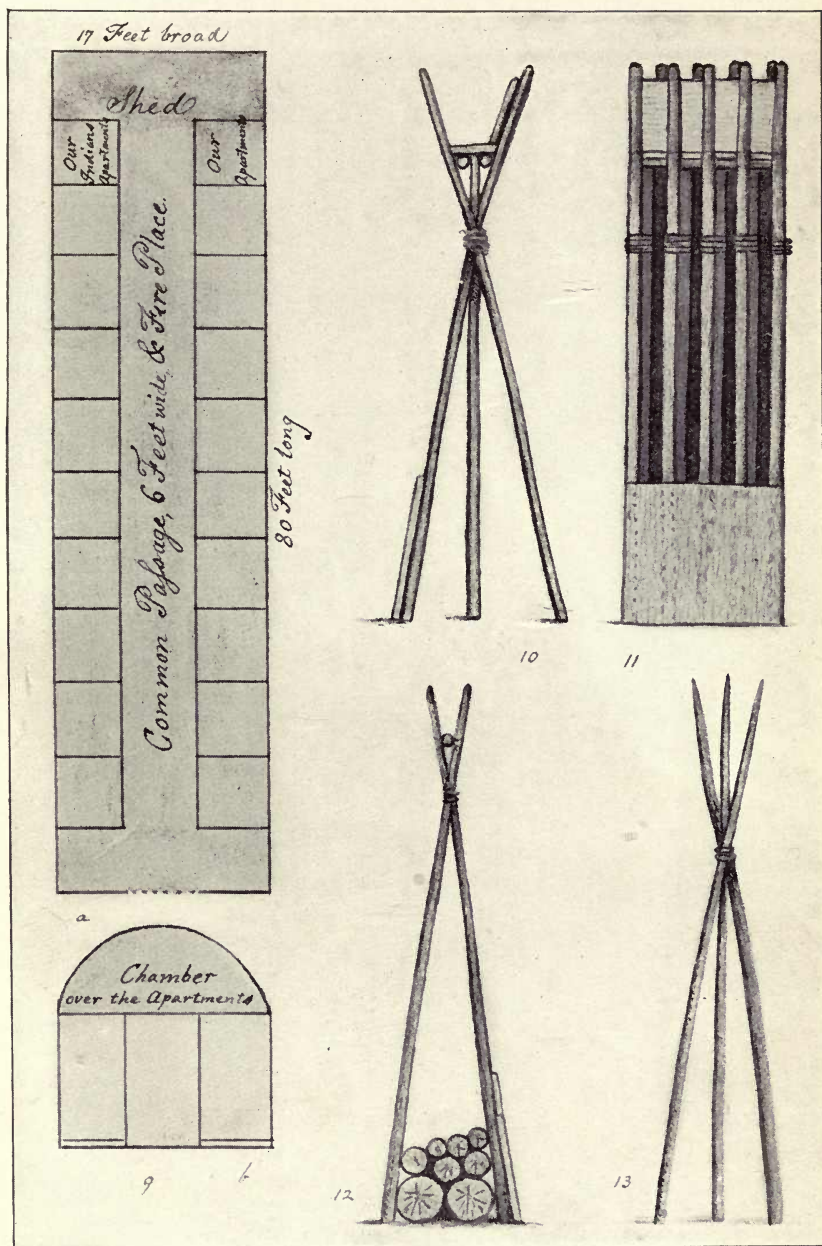




Plate 3

- 14 Bark house as shown by Morgan, with inner and outer frame
- 15 Interior of the same, showing the arrangement of upper and lower berths
- 16 Long house from Morgan, having an angular instead of the usual rounded roof

Plate 3

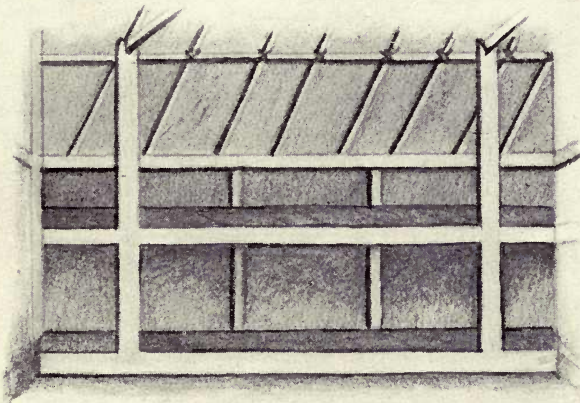
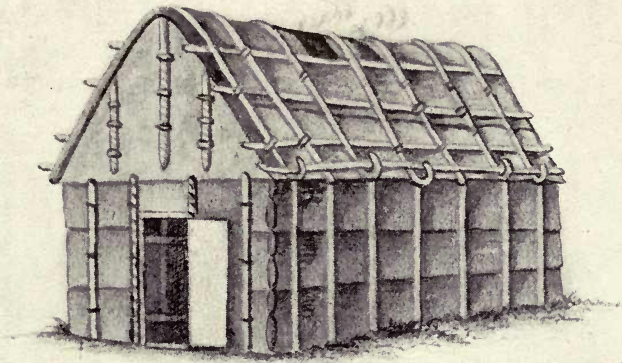
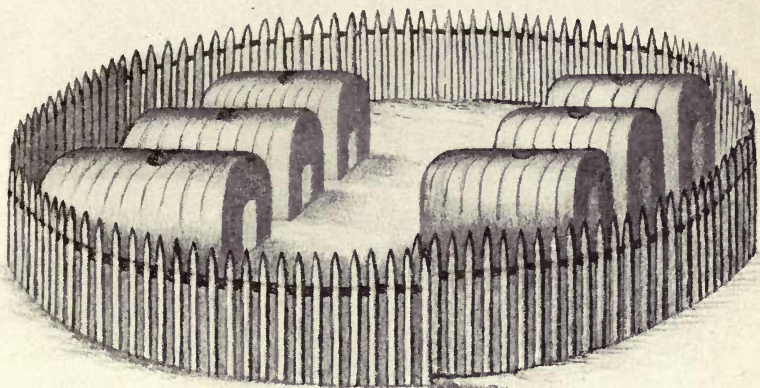




Plate 4

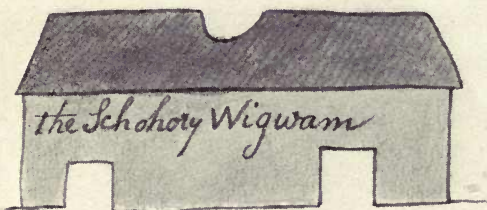
- 17 Fort and houses from Van der Donck. A circular stockade ascribed to the Minisinks
- 18 Houses from Colonel Romer's map of 1700, embracing three forms
- 19 Wigwam from petition of Schoharie Indians, showing chimney hole and doors at the side
- 20 Mahican fort from Van der Donck. This is angular and the houses have rounded roofs



17



18



19



20



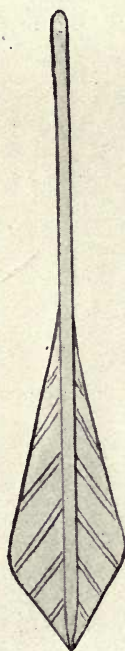
Plate 5

- 21 Plan of one of Sir William Johnson's Indian forts, built in 1756, and typical of most others of that period. The two blockhouses flanked the walls
- 22 Paddle from Champlain. This has an unusually angular and pointed blade
- 23 Elevation of early Iroquois bark house. *aa*=side posts, of which there are rows from end to end; *b*=junction of arch for the roof; *cc*=inside posts; *dd*=first elevated floor or bench; *ee*=second shelf; *f*=loft. To the outer frame large pieces of bark were stitched

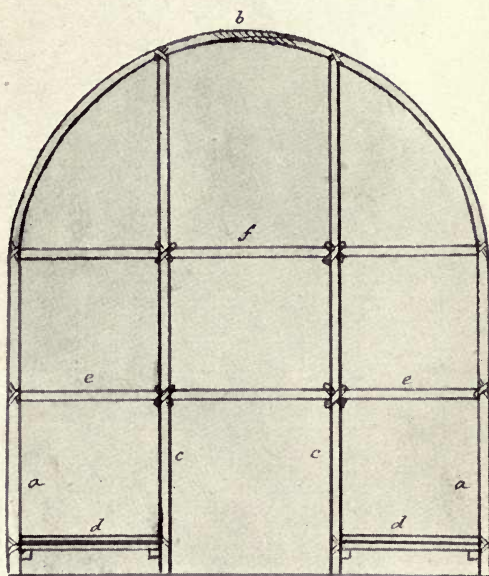


*Plan of the
Indian Castel*

21



22



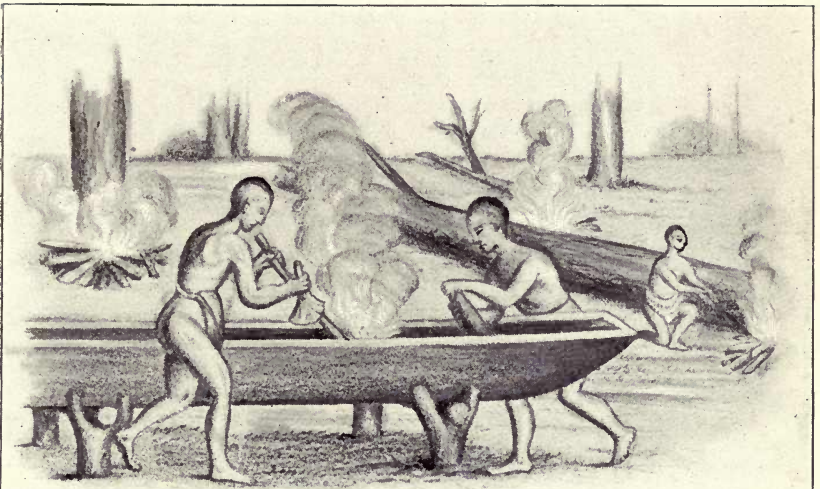
23



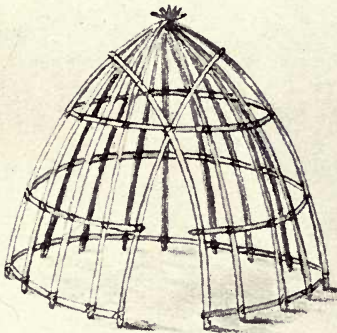
Plate 6

- 24 Making dugout canoe, from De Bry, showing the use of fire and stone implements
- 25 Frame of circular lodge of a common eastern Algonquin form, but not pointed like the western tepees
- 26 Circular hut from Champlain, such as were common in Canada in his day
- 27 Early picture of New York dugout canoe of very unusual form. The projections may have served in carrying it overland.

Plate 6



24



25



26



27

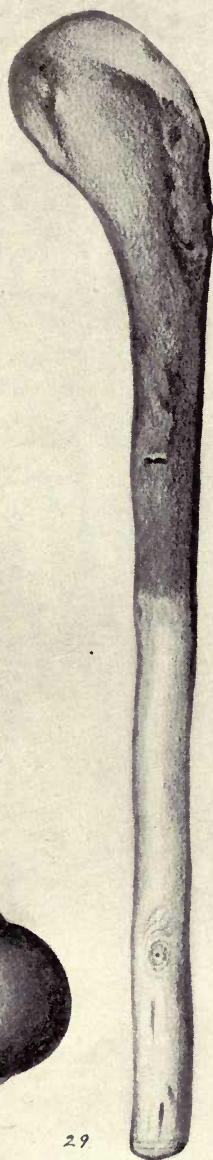


Plate 7

- 28 Wooden war club, still used in dances by the New York Iroquois
- 29 Modern war club of a simpler form
- 30 Head of blunt wooden arrow, being the kind most common on all
New York Indian reservations and probably a very early form
- 31 Modern dart used on these reservations, but like those made by
white children
- 32 Fragment of rush mat, taken from a Cayuga grave



28



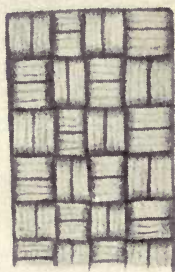
29



30



31



32



Plate 8

- 33 Bark trough, formerly used in collecting maple sap and often made by the Indians
- 34 Snow boat from Morgan's figure, and used in a winter game by the Senecas
- 35 Corn sieve, also from a figure by Morgan. This is not a common article
- 36 Bark scoop. This convenient article has now disappeared before modern substitutes.
- 37 Antique charred wood from a village site in Jefferson county. A rare thing to find in this form
- 38 Antique charred wood from Jefferson county
- 39 Javelin. This slender rod is used in a game
- 40 Hoop. This goes with the last, the javelin being thrown through the hoop.

Plate 8



39

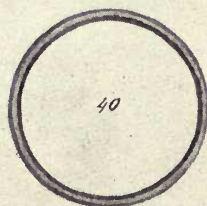
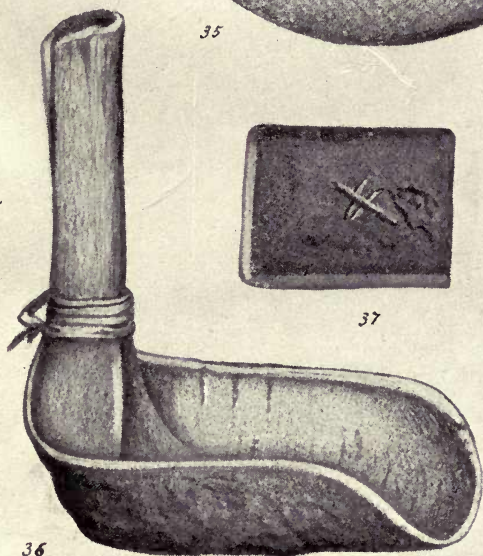
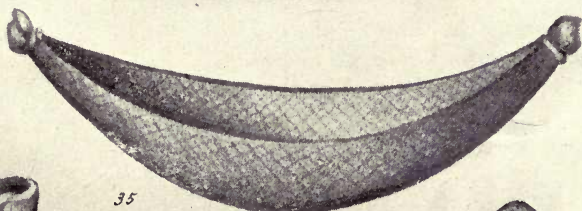




Plate 9

- 41 Cradle board, an Onondaga example, with strap attached for carrying or suspension
- 42 First stage of splint broom -
- 43 Second stage of this, preparatory to turning the outside splints
- 44 Third stage, showing the broom when finished
- 45 Sieve made in basket form, and still used in sifting corn meal
- 46 Bark tray. A strong and well made article, useful in many ways
- 47 Arrow with stone point, as prepared by an Onondaga Indian

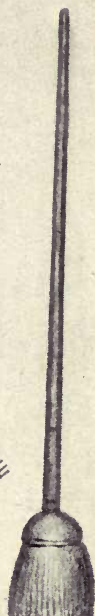
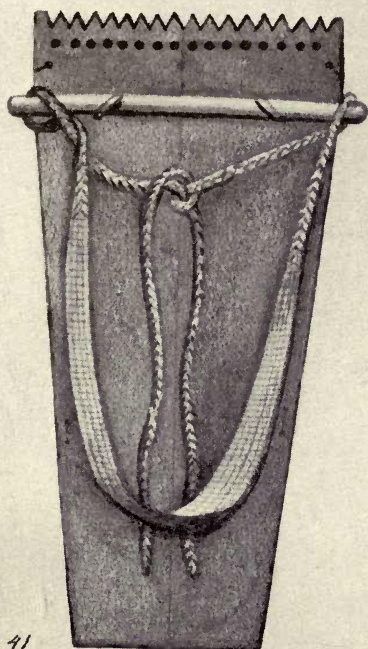




Plate 10

- 48 Salt cellar of modern form and rare
- 49 Braided bark as kept prepared for use
- 50 Bark fiber taken from the inner bark of the elm
- 51 Bark rope made of the same material. This is but little used now
- 52 Indian flute, formerly played by a lover to engage the attention of an Indian girl
- 53 *a*=small arrow with down, used in the blowgun; *b*=arrow with flannel, used in the same
- 54 Blowgun from Onondaga. A long wooden tube seldom seen now. The small arrows were shot from this
- 55 A curious form of club from an early French drawing. There is no description of this
- 56 Pestles and mortar from Onondaga. These early articles are largely used yet

Plate 10

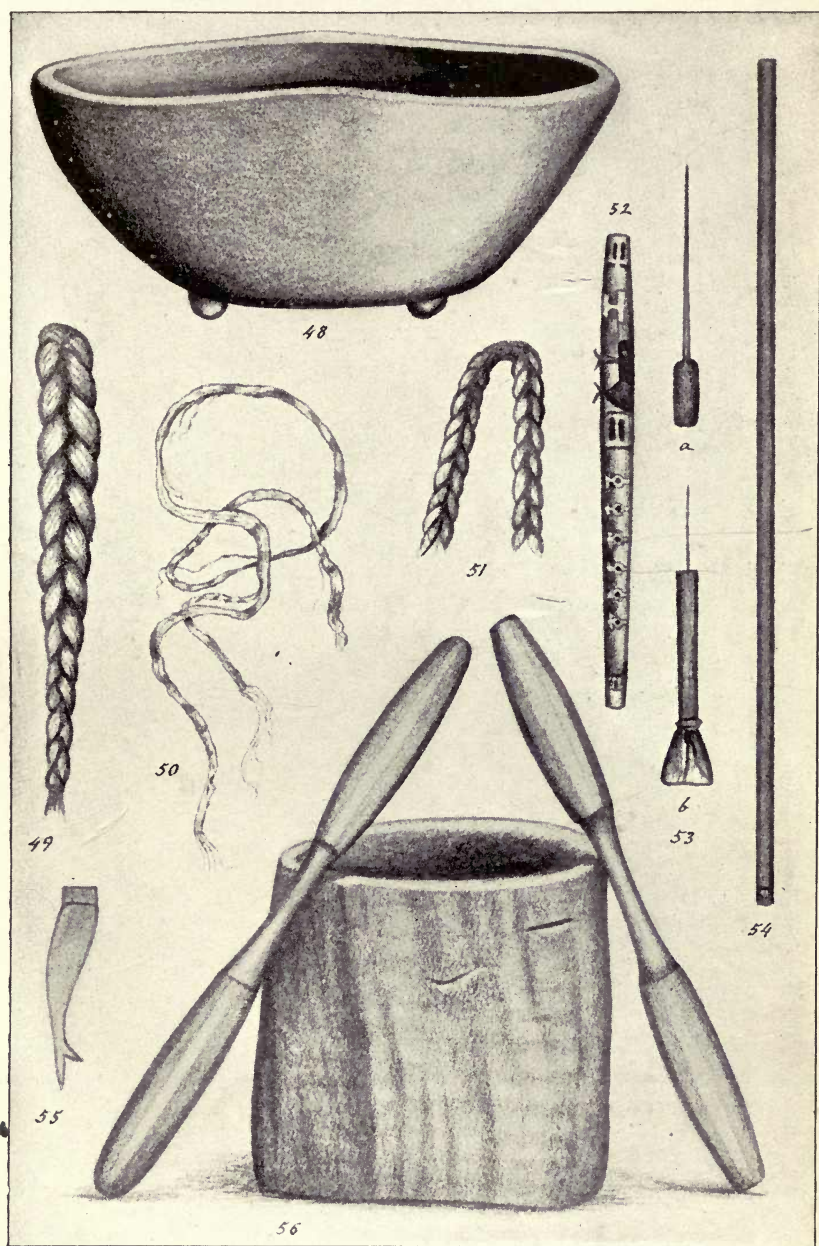
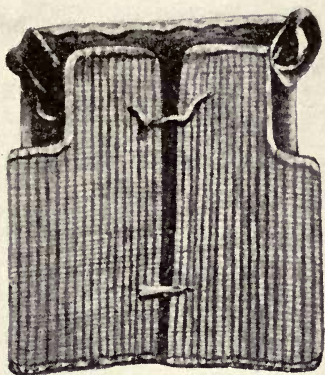


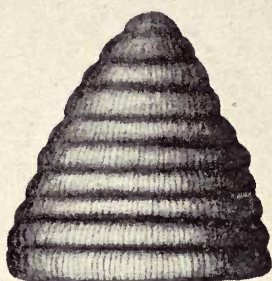


Plate 11

- 57 Coat of mail from a western source, but illustrating early eastern use
- 58 Helmet as it appears on antique pipes
- 59 Warrior in armor from Champlain. At that time the New York Indians fought much in the open field
- 60 Wooden ladle of large size and uncommon form



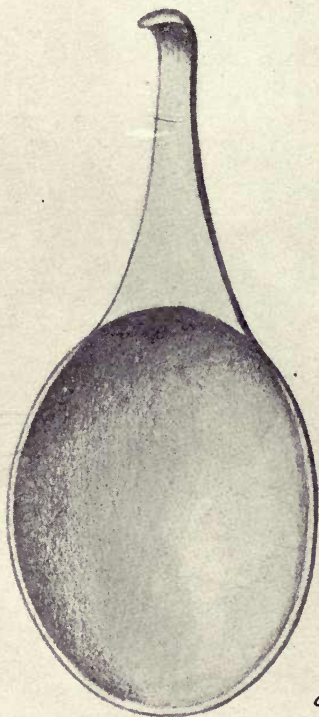
57



58



59



60



Plate 12

The first four figures are from an early French source, illustrating Indian picture writing.

- 61 Hunter returning home. Figure 81, plate 14, belongs to this
- 62 Figures of the slain, who are reversed and without heads
- 63 Posts for prisoners, by which they were securely confined at night
- 64 Direction stick, arranged to convey a message to some one following
- 65 Circular shield from a figure by Champlain
- 66 Angular shield from Champlain's figure. This was used by the New York Iroquois
- 67 Basket of Iroquois manufacture
- 68 Bark sled used by Onondagas

Plate 12

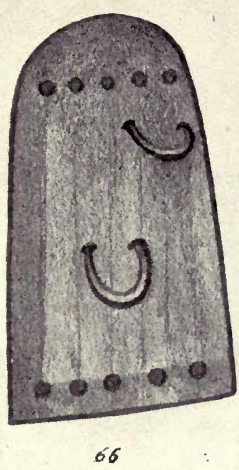
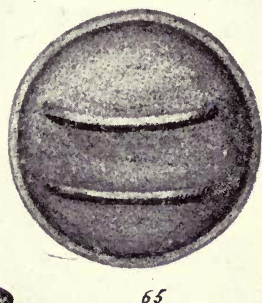
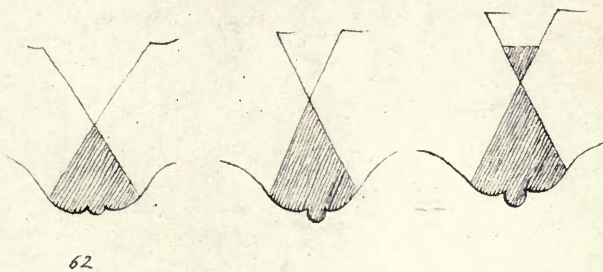




Plate 13

The figures on this and the next two plates are from a series prepared by a Frenchman to illustrate early Iroquois life.

69 Turtle totem, as painted on houses or elsewhere

70 Wolf totem

71 Bear totem. These three are the principal Iroquois clans. The later ones follow

72 Beaver totem

73 Deer totem. This alone has no weapon

74 Eagle clan, sometimes called the Hawk

75 Little Plover, now known as the Snipe

76 Great Plover, usually called the Heron now

77 Potato clan of the Senecas. This clan does not now exist

Plate 13

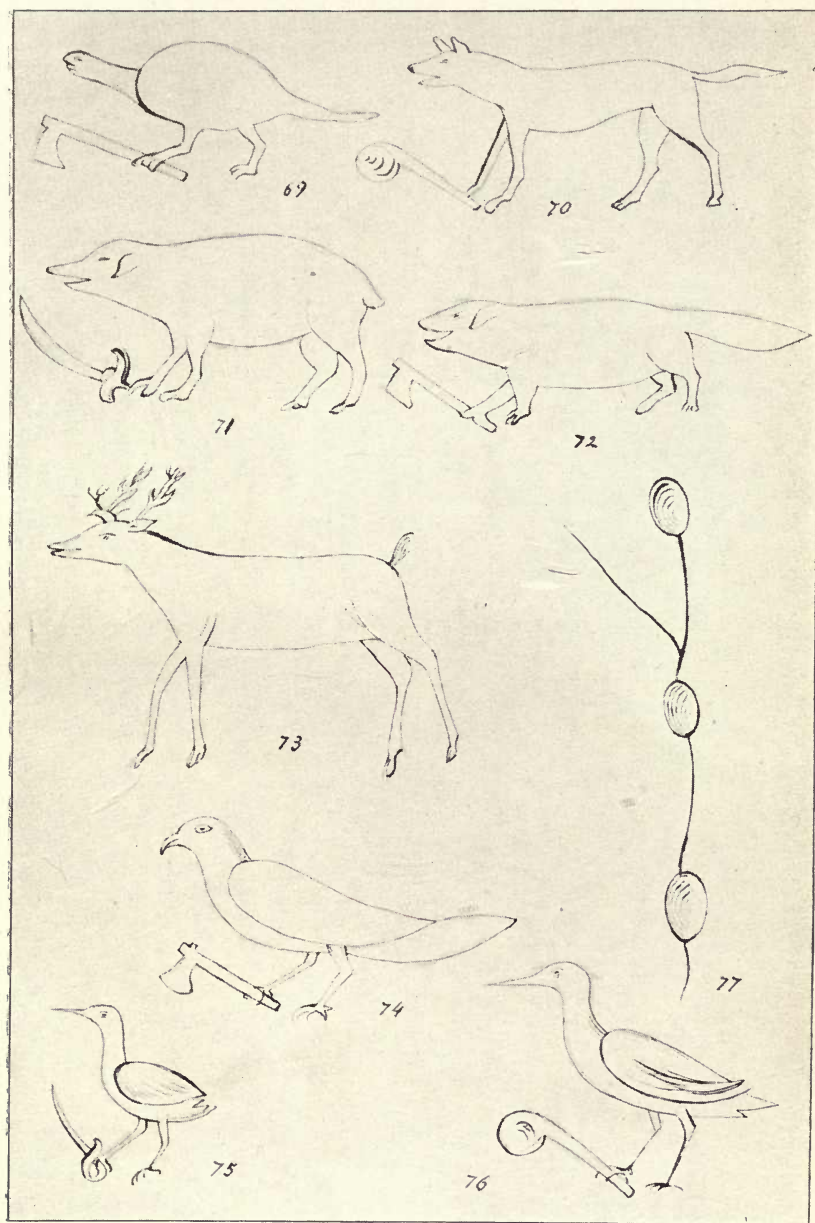




Plate 14

78 Bear and Turtle in council, they being brothers

79 Bear and Beaver in council

80 Return from war. *a*=warrior bearing scalps; *b*=a prisoner followed by his captor; *c*=gourd rattle which the prisoner carries; *d*=thongs which hold him; *e*=a man's scalp; *f*=a woman's scalp with longer hair

81 Return from hunting [*see* pl. 12, fig. 61]. This was accidentally removed from the hunter himself in figure 61. The three heads shows three does killed, being without horns. V=He has been away two days

82 Canoe going to war, the paddles showing the number of men

Plate 14

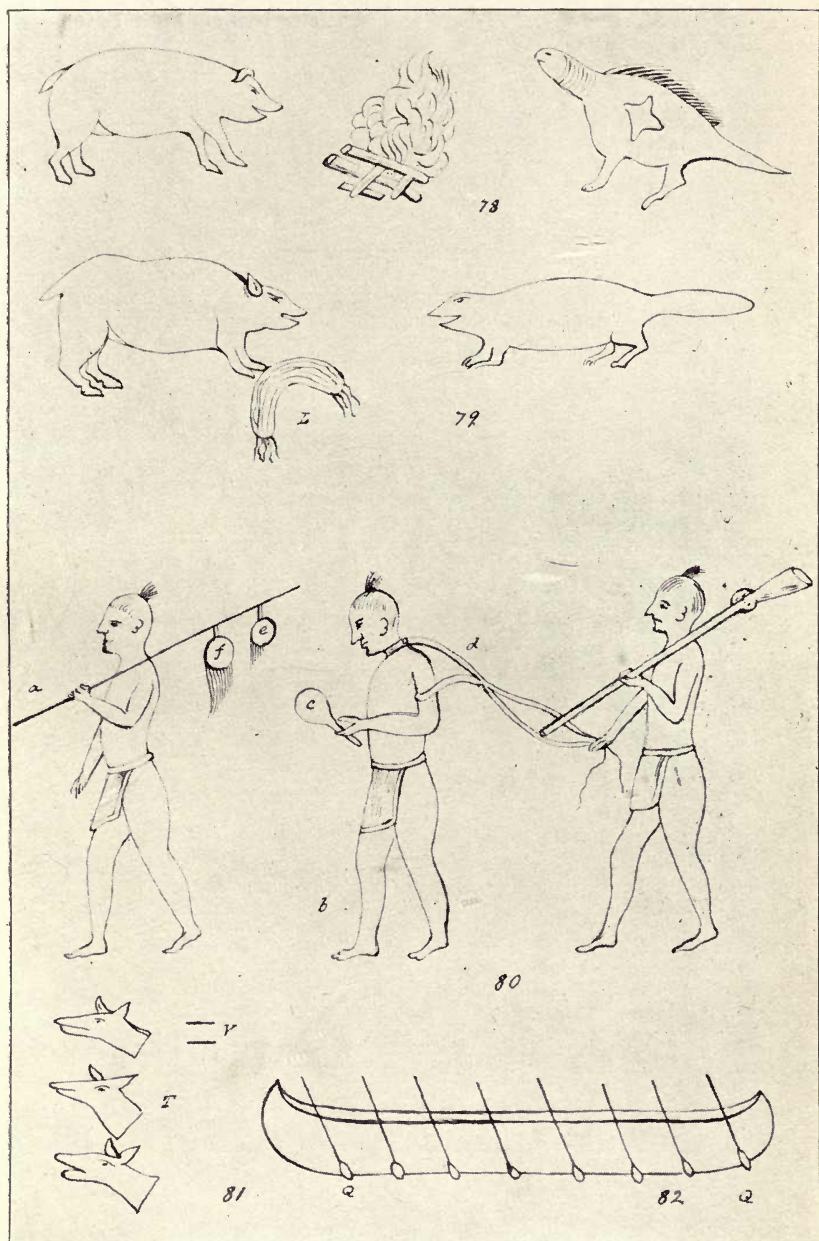




Plate 15

- 83 An Indian record as displayed in his cabin. *a*=number of times he has been wounded; *b*=he has been twice to war without returning; *c*=he was wounded by an arrow; *d*=he gave belts to raise a war party; *e*=he has gone back to fight before reaching home; *f*=he killed a man who had a bow and arrows; *g*=he took two men prisoners who were differently armed; *gg*=he also captured a woman; *h*=this is the way the women are distinguished from the men—by a waist cloth

Plate 15

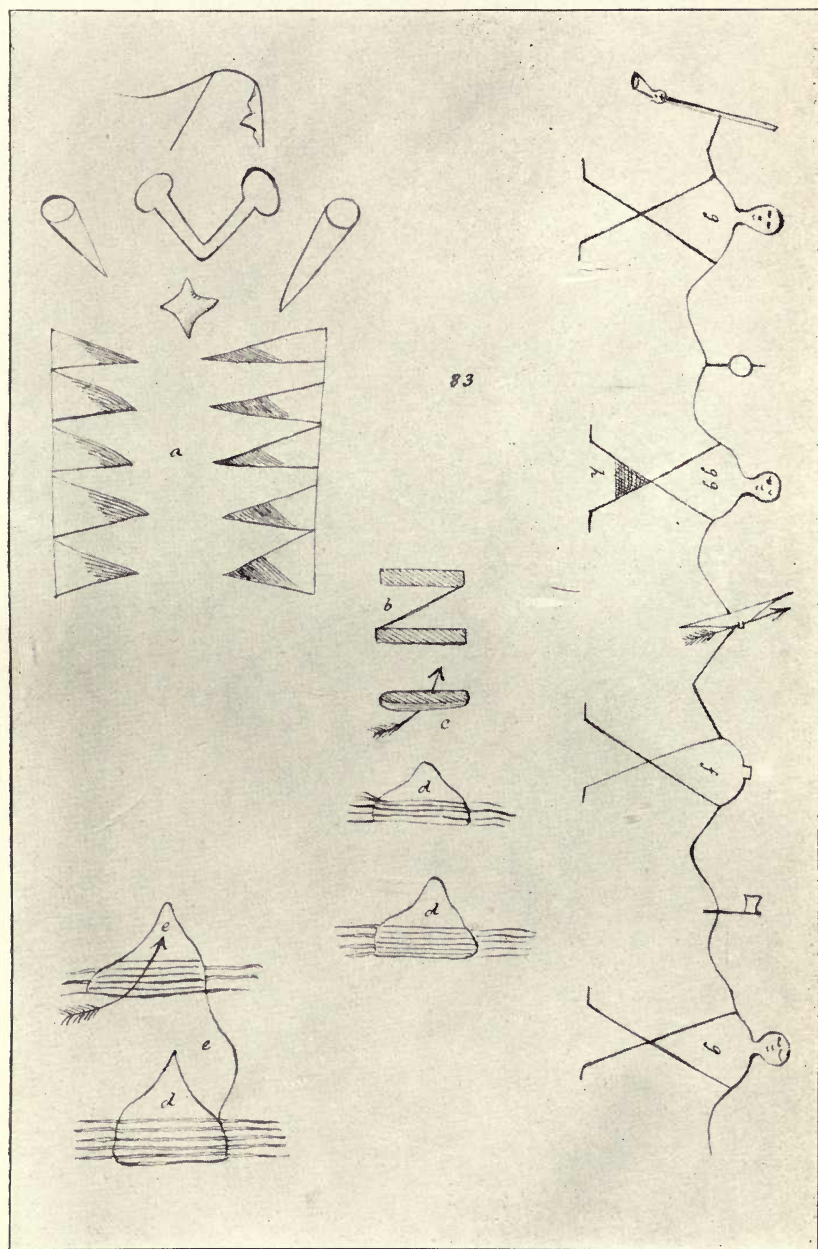




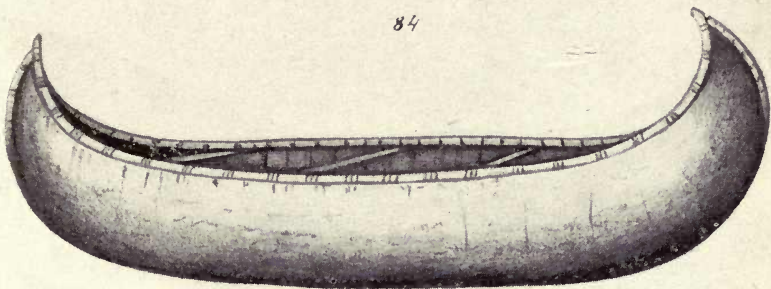
Plate 16

- 84 Elm bark canoe, from Morgan. This material was used by the New York Iroquois
- 85 Birch bark canoe of the common form for a small size
- 86 Pine canoe, quite generally used
- 87 Birch canoe, from Lahontan's picture of those used by the Algonquins
- 88 Elm bark canoe, figured by Lahontan as the typical form employed by the Iroquois
- 89 Paddle from the same writer, much like those still in use

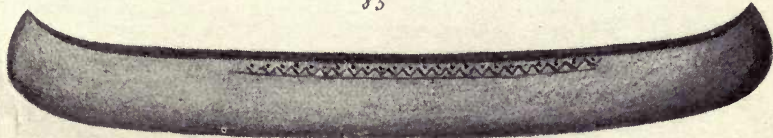
Plate 16



84



85



86



87



88



89

Plate 17

90 *Canoe Building at Papper's Island*, from a picture by W. H. Bartlett, made over 60 years ago. This embraces most of the process of canoe building, but takes in other uses of birch bark. It is a Canadian scene, but just as appropriate to New York

Plate 17

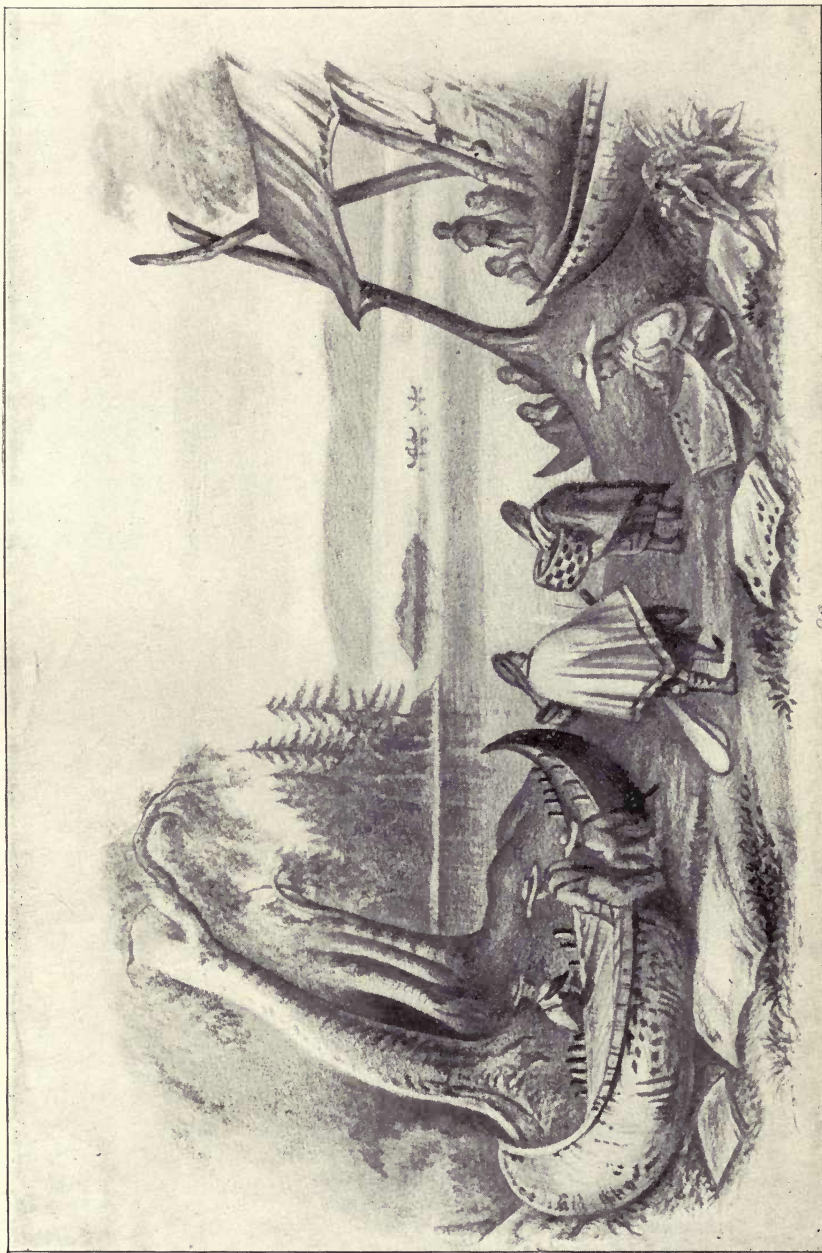




Plate 18

- 91 Stirring stick, used in the preparation of mush and succotash. It is now commonly made much plainer
- 92 Wooden ladle, once used at the great feasts at the Onondaga council house
- 93 Tally stick and wampum, sent out as a call for a religious council
- 94 Paddle from Long Island, found at Canoe Place

Plate 18

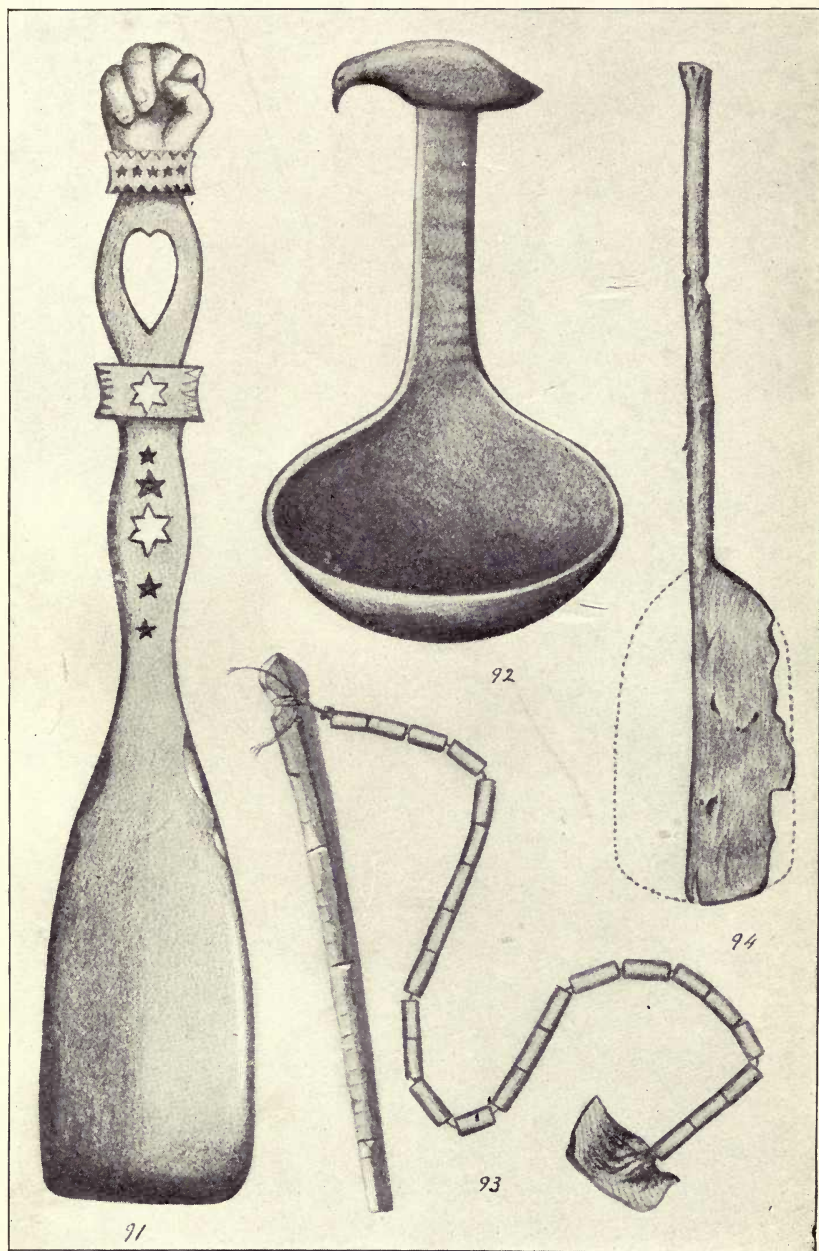




Plate 19

- 95 Corn husk doll, a frequent toy among the Onondagas, usually clothed
- 96 Bark barrel, rarely used now
- 97 Fish basket, another obsolete article
- 98 Bread turner, little used at present, though well known

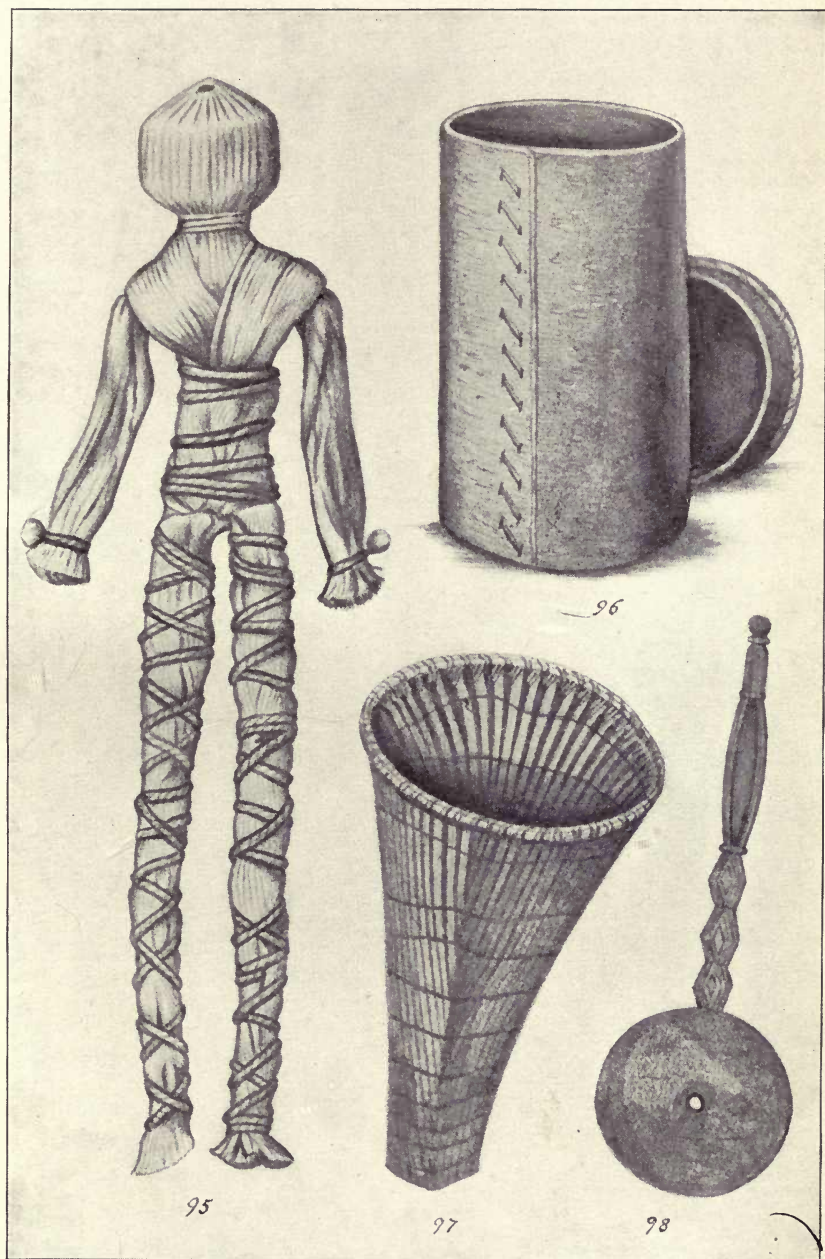




Plate 20

- 99 Woman and cradle. This shows the child on the board, with the hood thrown back
- 100 Women pounding corn, striking alternately with their pestles. Another woman sits near, shelling beans. Such scenes are frequent



99

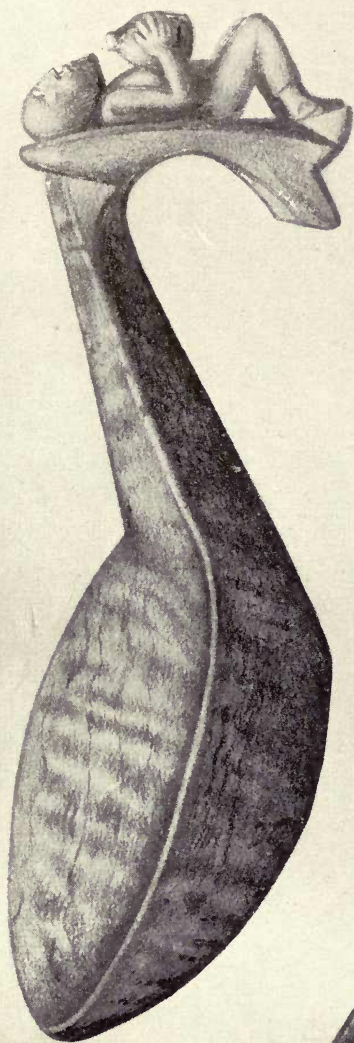


100

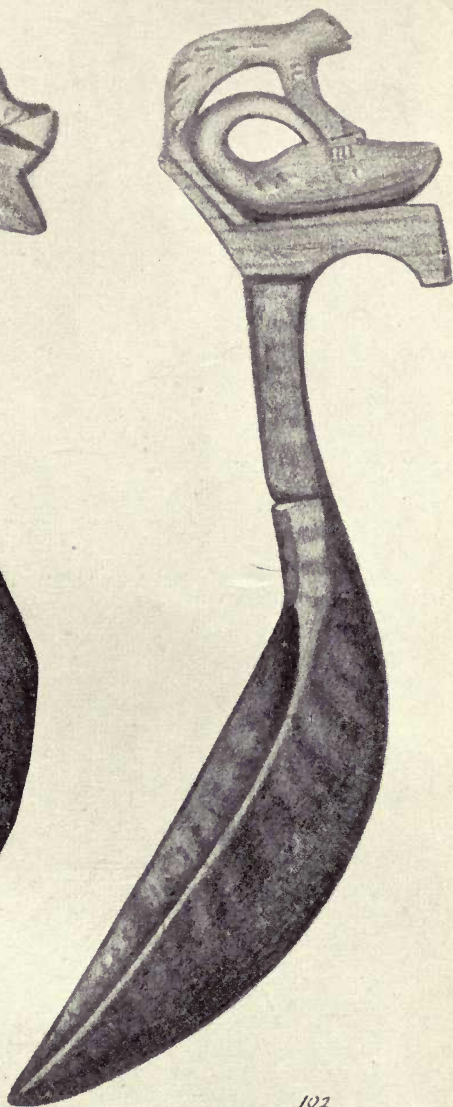


Plate 21

- 101 Wooden spoon from the Onondaga reservation, well carved and of fine material. A man lies on his back holding a jug
- 102 Spoon from the same reservation, also well carved. At the top of the handle a small animal has seized upon a goose or swan



101



102

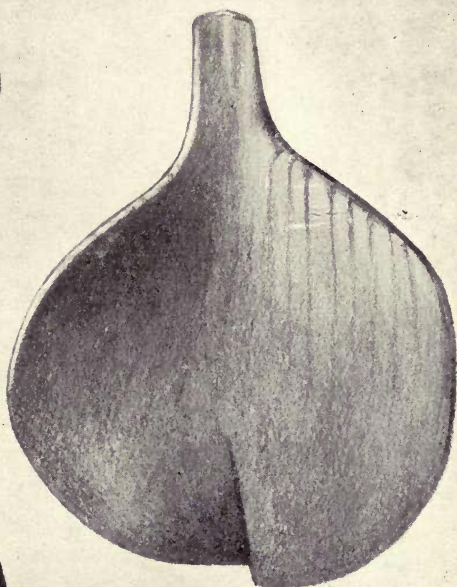


Plate 22

- 103 Spoon from the Onondaga reservation, finely worked and with a sleeping goose above
- 104 Antique spoon from an Iroquois grave and of actual size. This is imperfect, like all others from such sources
- 105 Charred corn, at least 400 years old
- 106 Antique spoon from a grave. It has lost the handle, but is otherwise well preserved. The width is 3 inches



103



104



105



106



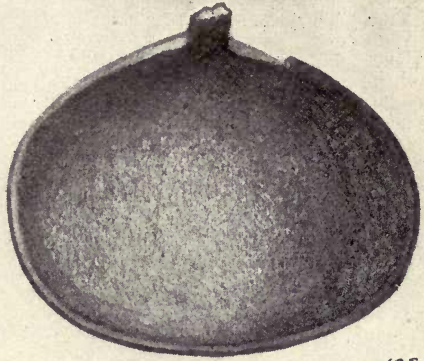
Plate 23

- 107 Reduced figure of wooden spoon from a grave in Ontario county, N. Y. The present length is $.4\frac{1}{2}$ inches, and the handle is unusually wide
- 108 Spoon from Ontario county grave. This has a very narrow handle
- 109 Small spoon from a similar grave. The width of the bowl is 3 inches, and the handle is of unusual form
- 110 Fine spoon from the Onondaga reservation and quite different from most others

Plate 23



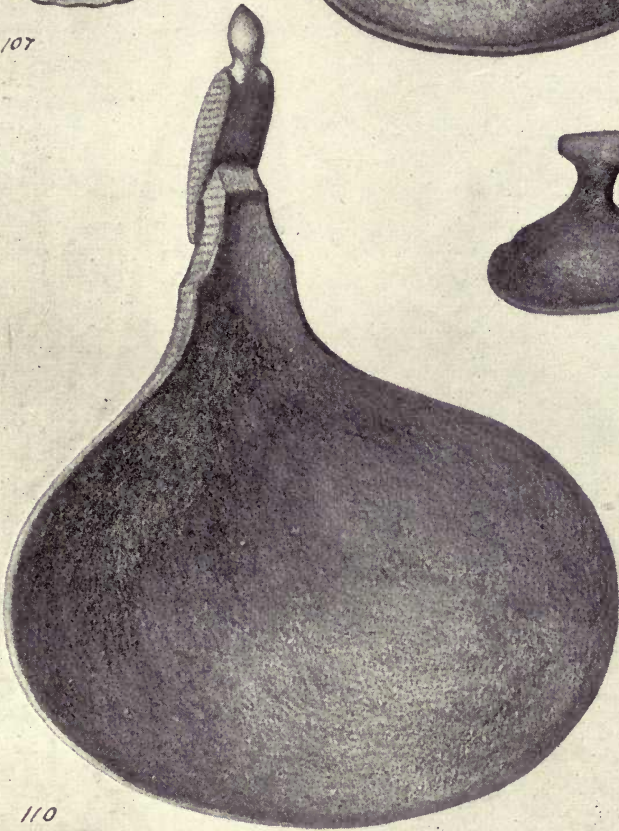
107



108



109



110



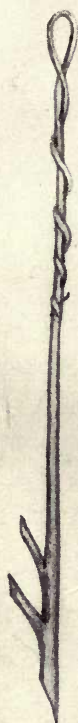
Plate 25

- 115 Bamboo whistle with slides. This was used by an Onondaga chief in making medicine
- 116 Wooden hook, used for suspending kettles over a fire
- 117 Burden frame of the best make, folded together, and with the strap attached. This was used for carrying loads on the back, and was the Indian litter
- 118 Lacrosse bat for playing the old game of ball. Those now used by white men have the sinews looser and require less skill

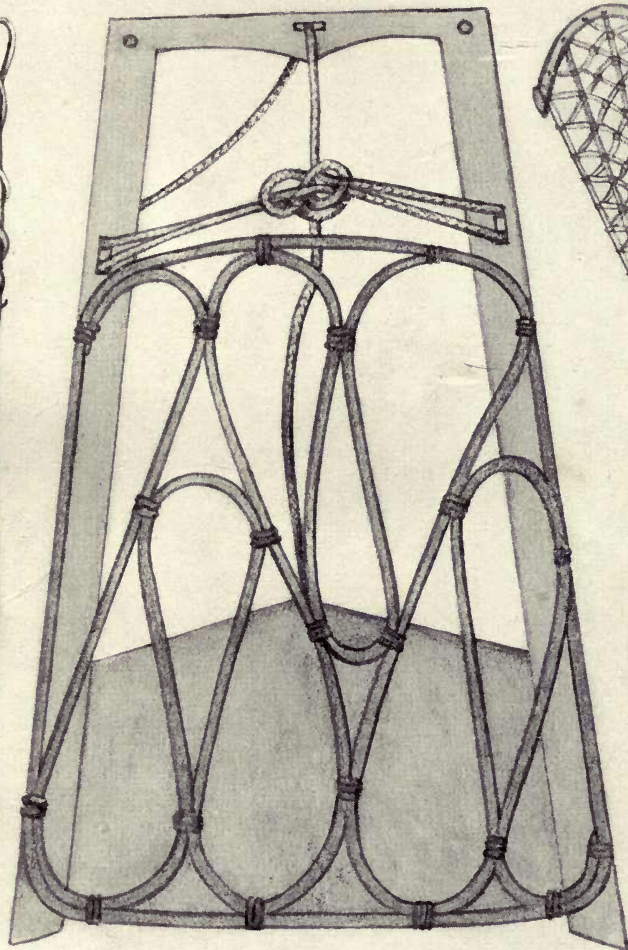
Plate 25



115



116



117

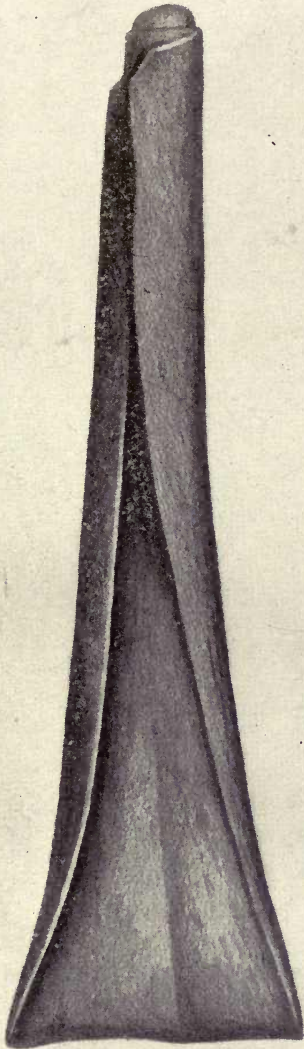


118



Plate 26

- 119 Bark rattle, made by doubling a piece of bark. This is found on most or all reservations, but there are no early descriptions
- 120 Ladder from an Onondaga Indian log cabin, an antique form made by cutting notches in a post
- 121 Turtle-shell rattle. The handle of this is wood, strengthened by hickory splints inserted in the shell



119



120



121



' Plate 27

- 122 Pattern worked on forehead or burden strap. Onondaga reservation
- 123 Bird snare of twine and bark from a figure by Morgan
- 124 Burden strap with woven pattern. Onondaga reservation. These
are made of the inner bark of the elm
- 125 Rude burden frame, made of bent sticks and large cords. Onondaga
reservation

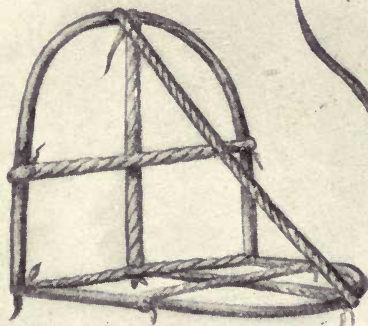
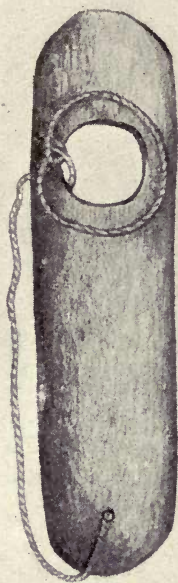
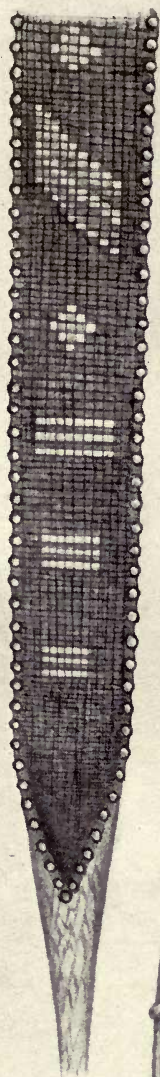
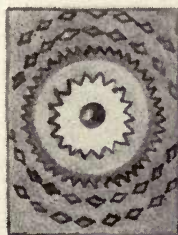




Plate 28

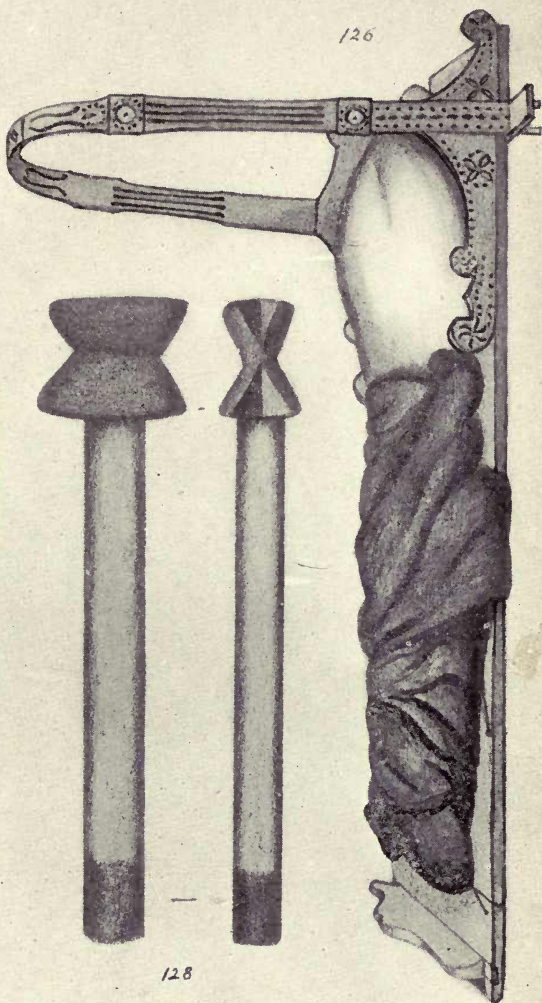
- 126 Indian cradle ready for use, but without the hood thrown over the arch
- 127 *a*=ornamental carving and metal work on the arch; *b*=ornamental carving on the raised sides of the cradle
- 128 Two views of a counting stick used in the game of the bowl. Each end is painted red
- 129 Another counting stick for this game, in the form of a spotted serpent



127 a

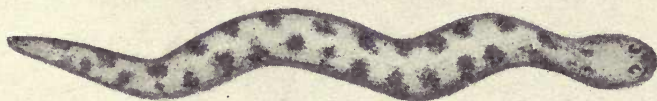


b



126

128



129



Plate 29

- 130 Gourd rattle with ring and plug inserted. Onondaga reservation.
There are rules as to what rattles shall be used on certain occasions. This one is 12 inches long
- 131 Seneca gourd rattle from Morgan's figure

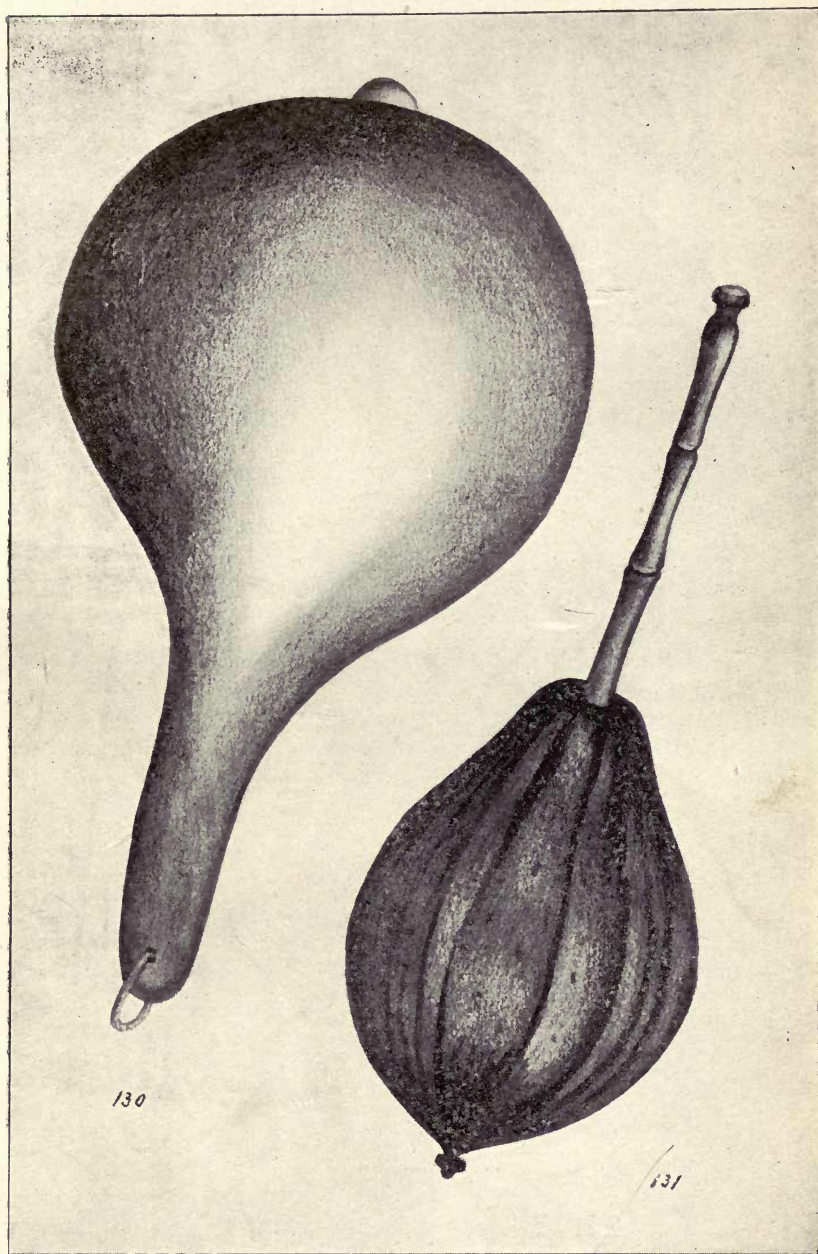




Plate 30

- 132 Small Indian drum, from a collection of Seneca articles at Buffalo N. Y.
This is small, but of actual size
- 133 Elaborately carved drumstick belonging to the last. Reduced to one half the length
- 134 Wooden bowl used in the peach stone game, Onondaga reservation.
This is old and fine. Reduced
- 135 Seneca bowl of another pattern, used in this game, with the stones in place. These seem flatter than usual
- 136 A set of peach stones, ground down and colored for use. Six are used and one side is blackened

Plate 30



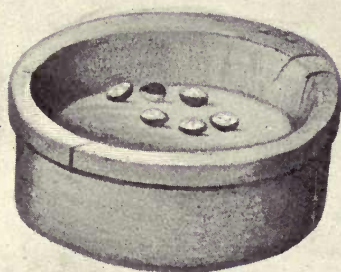
132



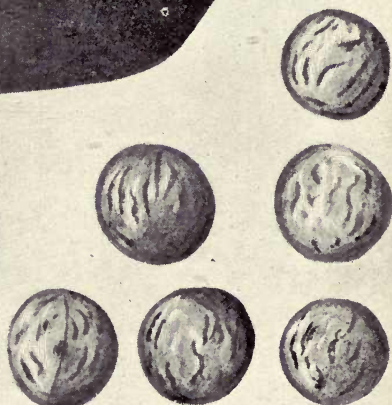
133



134



135



136



Plate 31

137 Full view of the snow-snake, the medium length of which is about 7 feet

138 Head of the snow-snake, actual size. This is weighted with lead run into grooves, and the heat from this has blackened the wood

139 Central part of the snake with an inscription. Full size, and the depth is about half the width

140 Top and side of the lower end. In the broader figure is seen the notch, in which the forefinger is placed in throwing

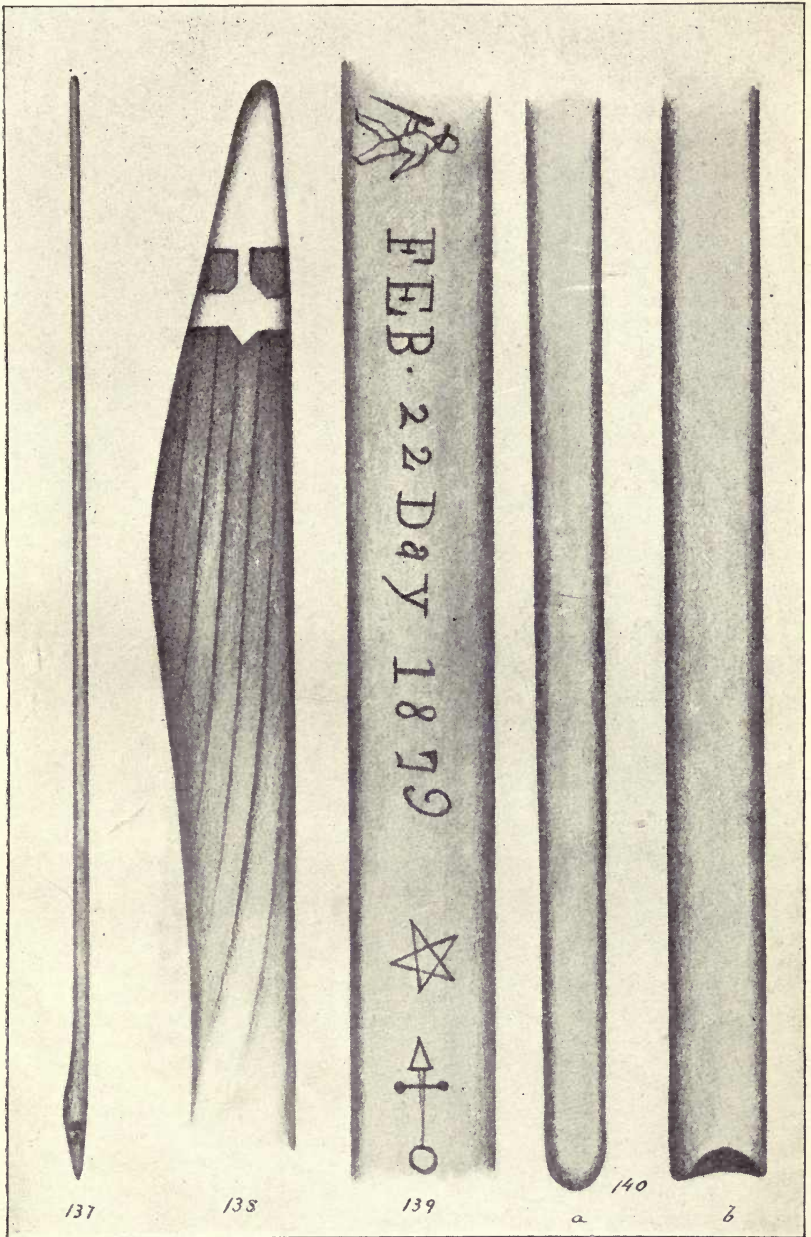
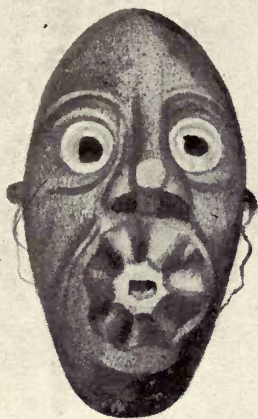




Plate 32

- 141 Iroquois false face or mask. The wearers take their name from this. This one has no hair, and the contracted and projecting mouth is a modern feature
- 142 This is what Mrs Converse called a maternity mask, from the small mask attached. Both the broad lips and projecting chin are modern features
- 143 A fine mask of the older types
- 144 Mask with mouth much awry. This feature is connected with a legend in both Canada and New York



141



142



143



144



Plate 33

- 145 Mask made of corn husks, worn by doorkeeper. The looser husks represent hair
- 146 Another husk mask, with a braid around the face, but with no suggestion of hair
- 147 Onondaga False Faces on their annual winter round and grotesquely clad
- 148 Onondaga False Face arrayed for dancing in the council house. From a figure by De Cost Smith. He carries a rattle and staff



145



146



147



148



Plate 34

- 149 Back of carved and painted cradle board, from the Onondaga reservation, but probably made at St Regis. The carving is good and the colors bright. Very much reduced
- 150 A slender wooden spoon from the Onondaga reservation, which differs greatly from the earlier forms. It is over 20 years old

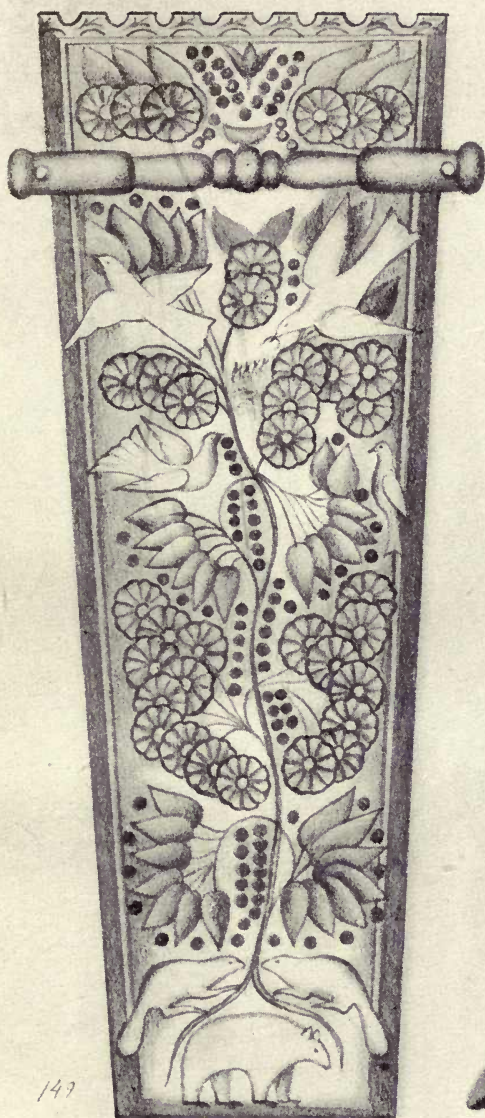




Plate 35

- 151 Young Onondagas throwing the snow-snake. From a photograph.
They are not lined up for a contest
- 152 Onondaga basket maker at work outdoors. Many find pleasant and profitable employment in this way, and at St Regis it is a large industry





INDEX

The superior figures tell the exact place on the page in ninths; e. g. 102⁸ means page 102, beginning in the third ninth of the page, i. e. about one third of the way down.

Adams, W. W., cited, 157³.
Adirondack Indians, Tree-eaters, 93⁸.
Agriculture, protection, 192⁹.
Algonquins, long house, 94⁷; use of trees as food, 93⁹.
Andastoes, 106¹.
Armor, 128¹.
Arrows, 123⁴.

Baby carriages, 167⁸.
Bags, 166².
Ball games, 183⁵.
Barber, J. W., cited, 87⁵, 174².
Bark, paintings on, 132⁹.
Bark barrels, 155⁴.
Bark canoes, 139⁷.
Bark dishes, 150⁸.
Bark houses, 97⁶, 102²; building or repairing, 107⁷; Indian name, 101¹.
Bark ladle, 155⁹.
Bark mats, 157⁹.
Barrels, 155⁴.
Bartlett, cited, 142².
Bartram, John, cited, 87⁵, 100¹, 103⁵, 107⁹⁻⁸², 124⁷, 130⁹⁻³¹², 146⁸, 185¹, 193¹, 194⁹.
Basket strap, 165⁸.
Basketry, 163⁴.
Baskets, 163¹.
Beatty, cited, 119².
Beauchamp, Rev. W. M., cited, 87⁸, 113⁸⁻¹⁴¹, 116⁷, 179⁴, 180⁸, 183⁹⁻⁸⁴¹, 185⁸.
Belknap, cited, 195⁵.
Belmont, Abbé de, cited, 155⁴.
Beschefer, cited, 184⁸.
Blockhouse at Onondaga, 115⁵.
Blowgun, 124⁴.
Bow and arrows, 122⁸.

Bowls, 150¹, 151⁸.
Boyle, David, cited, 87⁷, 188⁸, 190⁸.
Brass kettles, 151⁶.
Bread turner, 156⁴.
Brébeuf, cited, 108³, 180⁵.
Bressani, Father, tortured, 131⁷.
Bridges, 192⁸.
Brodhead, Colonel Daniel, cited, 174⁸.
Brooms, 158⁷.
Bruyas, Jacques, cited, 87⁸, 106⁸, 108³, 118⁹⁻¹⁹¹, 127¹, 148⁴, 159⁹, 160², 160⁵, 161⁹, 169², 169⁸, 177⁹⁻⁷⁸¹, 178⁸, 193⁶.
Burden frame, 167¹.
Burden strap, 165³.
Burial customs, 116⁸⁻²⁰⁵.

Caches, 193⁵.
Cammerhoff, Frederick, cited, 87⁸, 102³, 104⁷, 108⁵, 135⁵, 158⁴, 166⁷, 192⁵.
Campfield, Jabez, cited, 108⁴.
Canadian Algonquin lodge, description of building of, 96⁸.
Canassatego, mentioned, 158⁵, 161⁸.
Canoes, 139⁷⁻⁴⁹⁵; bark, 139⁷; dugout, 144²; process of making, 91³, 145⁸⁻⁴⁶⁵; oars, 146⁶; paddles, 146⁶; use as shields and ladders, 129⁶.
Cartier, cited, 195⁸.
Catlin, George, cited, 87⁹, 122⁴.
Cayugas, houses, 99⁸, 102⁸.
Ceremonial articles, 169⁸⁻⁷²⁴.
Champlain, Samuel de, cited, 88¹, 127⁸, 139², 167², 179⁵, 194¹, 194⁸, 195⁵.
Charlevoix, P. F. X. de, cited, 88², 101⁵, 107¹, 128⁴, 128⁷, 129⁸, 138⁴, 141⁴, 142⁸⁻⁴³⁹, 162¹, 163¹, 182¹.

Chaumonot, cited, 104⁹, 170³.
 Clark, J. V. H., cited, 88², 116⁹-17²,
 120³, 166², 172¹.
 Clinton, De Witt, cited, 154⁸.
 Coats of mail, 128³.
 Colden, cited, 118⁸, 132⁷.
 Conover, George S., cited, 88², 108⁸,
 119³, 173³, 174⁵.
 Converse, Mrs Harriet Maxwell,
 cited, 88², 189³-90³.
 Corn, bark barrels for, 155³.
 Corn husks, for door mats, 156⁹;
 salt bottles, 156⁷; other uses, 157².
 Corn meal stirrer, 159³.
 Cornplanter, mentioned, 173⁸.
 Council house, Onondaga word,
 101¹; Onondagas, 100¹; Senecas,
 100⁷.
 Counting sticks, 181¹.
 Cradles, 167⁸.
 Culin, Stewart, cited, 88⁴, 181³.
 Cusick, David, cited, 107¹, 113⁸-14¹,
 116⁷, 179⁴, 185⁵.
 Dall, William H., cited, 88⁴, 185⁸-
 86².
 Darts, 120⁶.
 Dawson, Sir J. W., cited, 88³, 110⁶,
 116², 128².
 Death, burial customs, 116⁶-20⁵;
 superstitious customs, 109⁶.
 De Bry, Theodorus, cited, 88⁵.
 Deer buttons or bones, game of,
 180².
 De la Potherie, Bacqueville, cited,
 88⁶, 148¹.
 Delawares, houses, 97⁵; idols, 172⁸.
 Dellius, Rev., cited, 106⁸.
 De Nonville, mentioned, 155⁴.
 De Schweinitz, Edmund, cited, 88⁶,
 107², 172⁹.
 De Tracy, mentioned, 155⁴.
 De Vries, David Peter, cited, 88⁶,
 117⁷, 118⁷, 146³, 170⁶.
 Dish, game of, 180⁶.
 Dishes, 151⁸, 152⁴.
 Door mats, 156⁹.
 Doty, L. L., cited, 88⁷, 172⁴.
 Drums, 174⁸, 176⁷.
 Dugout, 144².

Eels, cooking of, 194⁸.

False faces, 184²-92³.

Fire, how obtained, 91⁴; giving
 signal by smoke of, 193⁷; use of,
 91¹.

Fire drill described, 92⁴.

Fire-making, 91¹-93⁵.

Fish spears, 130⁵.

Fishing, basket fish net, 148⁶;
 spearing eels, 147¹; nets, 147²; at
 night, 146⁸; stone sinkers, 147⁸;
 fish weirs, 148⁸.

Flint knives for cutting wood, 93³.

Flute, 177².

Food, 93⁶-94².

Fort Hunter, 115⁵.

Forts, 110⁸-16⁵; description of build-
 ing, 110⁶; attacked by Champlain,
 112⁸; David Cusick's account,
 113⁸-14¹; earliest, 110⁵; Mahican,
 114³; Minisink, 114⁴; mission,
 115⁵; Mohawk, 115²; directions
 for one at Onondaga, 115⁷; triple
 palisade of Onondagas, 115³;
 built by River Indians, 114⁷;
 built for Schoharie Indians, 115⁶;
 round towers, 116²; Wetques-
 check, 114⁶.

Frey, mentioned, 120², 145⁵.

Fruit, protection, 193¹.

Fruit stones, game played with,
 180⁵.

Fuel, one use of, 193⁹.

Games, 180¹-84¹; javelin, 121².

Garakontie', request for coffin, 119⁹.

Gookin, Daniel, cited, 88⁷, 97², 127⁸,
 151⁸-52², 163⁸.

Greenhalgh, Wentworth, cited, 99⁶,
 104⁶, 109⁹; mentioned, 112³, 161².

Gutters, 160³.

Hakluyt, cited, 195⁵.

Hale, Horatio, cited, 88⁸, 107⁴.

Handmill, 149⁷.

Harpoons, 130⁶.

Heckewelder, J. G. E., cited, 88⁶,
 109⁴, 136⁶, 171⁴.

Henry, Alexander, cited, 88^o, 141², 143⁷-44².
 Hermann, Augustine, cited, 144⁵.
 Hewitt, J. N. B., mentioned, 180⁸.
 Higgeson, Rev., cited, 88^o, 95⁴, 151⁷.
 Hoes, 193⁴.
 Hominy stick, 156¹.
 Hooks, 159⁸.
 Horses, 161¹.
 Horsford, Jedidiah, cited, 172³.
 Hough, Walter, cited, 89¹, 128³.
 Household articles, 149¹-60³; bark barrels, 155⁴; bark dishes, 150⁸; bark ladle, 155⁹; bark mats, 157⁵; bowls, 150¹, 151⁸; bread turner, 156⁴; brooms, 158⁷; corn meal stirrers, 159⁹; dishes, 151⁸, 152⁴; door mats, 156⁹; hominy stick, 156¹; hooks, 159³; kettles, 151⁶; ladders, 159⁶; ladles, 151⁸; wooden mortar, 149⁷; pails, 151⁹; stone pestle, 149⁵; wooden pestle and mortar, 149⁵; salt bottles, 156⁷; salt cellar, 160¹; sieves, 150¹; spoons, 151³, 151⁸, 152⁴; sugar spoons, 159³; trays, 150¹, 150⁵.
 Houses, 94³-110⁸; bark, 97⁹, 101¹, 102³, 107⁷; description of building of Canadian Algonquin lodge, 96⁶; of chiefs, 104⁷; circular, 94⁹, 97⁴, 105⁸; compared to garden arbors, 98⁸; raised couches, 97³; council house, 100¹, 101¹; covering with mats, 94⁹, 95⁹, 96⁷; dancing, 97²; endicha, 108³; festival purposes, 95²; hight, 99⁴; Indian names, 101¹; number of inmates, 99⁷; length of, 97⁹, 98⁸, 99²; long house, 94⁷, 95⁹, 96⁴, 97⁴, 97⁹, 102⁴, 106⁵; on Long Island, 96¹; in Massachusetts in 1630, 95⁴; Onondaga council house, 100¹; ornamentation, 108⁷; summer houses, 96⁹; typical, 104¹; varied according to standing of person, tribe or nation, 95³; in village near Greenwich, 96⁴; war councils held in, 108⁹.
 Howe, Henry, cited, 87⁵, 174².

Hunting, 177⁹-79⁹.
 Hurons, burial customs, 116⁹-17², 119⁸; fire-making, 91⁷; games, 103⁹; pestilence among, 110¹; tortures, 103⁷.
 Idols, 172⁸-74⁸.
 Iroquois, typical cabins, 104¹; distinctions between rich and poor, 105²; fire-making, 91⁸-92²; house ornamentation, 108⁸; long house, 94⁸, 95⁹, 97⁴, 97⁹-98⁷, 102¹; name of confederacy came from long house, 106⁴; villages often removed, 105⁵.
 Javelin games, 121².
 Jemison, Mary, cited, 136⁴.
 Jesuit Relations, *see* Relations des Jésuites.
 Jogues, Father, tortured, 131⁸; mentioned, 135¹.
 Johnson, Sir William, mentioned 115⁶; cited, 170⁹-71², 194³.
 Josselyn, John, cited, 89¹, 126⁵, 151¹, 152².
 Journal of American Folk-lore, cited, 89².
 Kalm, Peter, cited, 89², 141⁶, 147⁷, 170⁹, 195².
 Ketchum, William, cited, 89³, 124³-25³, 149³.
 Kettles, 151⁶.
 King Philip, war club, 126².
 Kirkland, Rev. Samuel, cited, 100⁷.
 Lacrosse, 183⁵.
 Ladders, 159⁶.
 Ladles, 151⁸, 155⁹.
 Laftau, J. F., cited, 89³, 102⁷, 128⁸, 132⁴, 157⁸, 194².
 Lahontan, A. L. de D., cited, 89³, 140¹, 146⁹.
 Lamberville, Father Jean de, cited, 105⁶, 119⁹-20¹, 184⁵.
 Land travel, 160⁸-69⁵.
 Le Moyne, Father, mentioned, 104².

Litter, 167¹.

Lloyd, Herbert M., cited, 102⁴, 102²-3¹.

Lodge used by conjurors, 194³.

Long house, 94⁷, 96⁴, 97⁴, 97²-98⁷; Indian names, 106⁵; not confined to Iroquois family, 95²; Lafitau's description, 102⁴.

Loskiel, G. H., cited, 89⁴, 97⁴, 125⁴, 135⁵, 152³, 170⁶, 172², 192², 195², 195⁵.

Loveland, R. D., charred articles obtained by, 160⁵.

McMasters, Guy H., cited, 89⁶, 137⁷-38⁴.

Mahicans, fort, 114³.

Map drawing, 194¹.

Maple sugar, bark vessel for carrying sap, 169³.

Marshe, Witham, cited, 89⁵, 161³.

Masks, 184²-92³.

Mason, Otis T., cited, 89⁵, 162⁴, 163⁵, 163⁵-64⁵, 165², 168¹.

Massawomeks, defensive armor, 129³.

Mats, 156², 157⁵.

Medical treatment, 195¹.

Megapolensis, cited, 118⁷.

Mercer, Henry C., cited, 89⁵, 91⁷.

Minisink fort, 114⁴.

Minquas, called Andastoes, 106¹.

Mohawks, fire-making, 91⁴, 92³; fort occupied by, 110⁵; fort of 1665, 115²; houses, 99¹, 99³; national symbol, 92³.

Montanus, Arnoldus, cited, 98⁷, 170⁵.

Montour, Captain, story of death, 137³.

Morgan, Lewis H., cited, 89⁷, 92³, 101¹, 102⁵, 102²-3¹, 104⁵, 105¹, 107⁵, 117³, 121³, 121⁵, 122¹, 123², 123⁷, 124³, 126², 126², 136³, 140⁴, 148², 150¹, 150⁵, 155⁵, 156¹, 156³, 161³, 165⁴, 167⁴, 168³, 176³, 177³, 178⁷, 180⁷, 182⁴-83³, 186⁴-87⁷, 195⁵.

Morse, Jedidiah, cited, 89⁷, 171⁵.

Mortar, wooden, 149⁵, 149⁷.

Moulton, Joseph W., cited, 89⁷, 144³.

Musical instruments, 174³-77³; bamboo whistle, 177²; drums, 174⁵, 176⁷; flute, 177¹; rattles, 175²; violins, 177³.

Nanticokes, burial customs, 117³.

Neatness, hardly an aboriginal virtue, 158³.

Norris, Major James, cited, 173³.

O'Callaghan, E. B., cited, 89⁵, 108²-9¹, 109², 113¹, 114⁷, 114²-15¹, 115⁴, 115⁷, 118³, 125⁵, 132³, 133²-34², 170²-71³, 175³.

Oneida castle, account of, 112⁵.

Oneidas, graves, 117², 118³; houses, 99⁵, 99⁵.

Onondaga, blockhouse, 115⁵; directions for fort at, 115⁷.

Onondaga lake, mission fort at, 115⁵.

Onondagas, arrows, 123⁴; council house, 100¹; fire-making, 93²; forts, 115⁵; graves, 120³; houses, 99³, 99³; villages often removed, 105⁵.

Otschinachiata, mentioned, 120².

Pails, 151².

Painted Post, stories about, 137⁴.

Paintings on bark, 132⁵.

Parkman, cited, 116².

Patchin, stories about Painted Post, 137⁴.

Peach stones, games played with, 180⁷.

Pennsylvania Archives, cited, 89⁵.

Penobscot Indians, fire-making, 5²-92².

Pestilence, superstitions concerning, 110¹.

Pestle, wooden, 149⁵.

Philip, King, war club, 126².

Picture writing, 194¹.

Poles, 169⁵.

Poncet, Father, tortured, 132¹.

Posts, memorial, 132^o.
 Pouchot, M., cited, 89^o, 140⁷-41¹, 142⁴.
 Pounds for taking game, 177^o, 179².
 Powell, Miss, cited, 149².
 Proctor, Colonel Thomas, cited, 89^o, 173⁴-74².

Rattles, 175³.

Rau, Charles, cited, 90¹, 145⁸-46³.
 Relations des Jésuites, cited, 90¹, 91⁵, 96⁷, 98⁸, 103⁸, 104⁴, 105⁸, 106⁶, 109⁷, 116⁴, 118⁸, 119⁸, 119⁸-20¹, 127⁸, 129⁴, 130⁷, 131⁷, 135¹, 137², 138⁸-39¹, 147³, 150⁸, 158¹, 170¹, 184⁴, 184⁷, 196⁴.

Romer, Colonel, mentioned, 161².

Running the gauntlet, 131⁴.

Salt bottles, 156⁷.

Salt cellar, 160¹.

Sand for cutting wood, 91⁸, 93⁴.

Sandstones for cutting wood, 93⁴.

Schoharie Indians, fort, 115⁷.

Schoolcraft, cited, 195⁵.

Scoop, 155⁹.

Senecas, bark house, 101⁸; use of blowgun, 124⁸-25³; burial customs, 117⁵; council house, 100⁷; houses, 99⁸, 99⁸, 108⁴; idols, 172⁸.

Shea, J. G., cited, 106².

Shell implements for cutting wood, 91².

Shields, 127², 129¹.

Shuttle, 193⁷.

Sieves, 150¹.

Sleds, 163¹.

Smith, De Cost, cited, 90², 187², 188⁸; mentioned, 191², 191⁹.

Smith, Captain John, cited, 90², 123¹, 129⁸-30³, 145².

Snares, for taking game, 177^o, 178².

Snow boat, game of, 182³.

Snow snake, game of, 182³.

Snowshoes, 161¹, 161⁸.

Spangenberg, Bishop, cited, 177⁷.

Spears, 126⁹-27²; fish, 130⁵.

Spoons, 151⁸, 151⁸, 152⁴.

Staff, 169⁴.

Sticks, 169⁸; counting, 181¹.

Stone tools for cutting wood, 91², 93³.

Straws, game of, 181⁹.

Sugar spoon, 159⁵.

Sundial, 171⁴.

Sweating-house, 194⁸.

Tinder, use in making fire, 91⁵.

Tiotohatton, 99⁸.

Tomahawk, 125².

Tortures, 131⁷; in war captain's cabin, 103⁷.

Totems, 109⁴, 132⁶.

Transportation, 160⁸-69⁵.

Traps for taking game, 177^o, 178².

Trays, 150¹, 150⁵.

Tree-eaters, 93⁸-94³.

Turner, O., cited, 90⁸, 178⁸.

U. S. Bureau of Ethnology, cited, 90⁸.

Van Curler, Arent, cited, 99¹, 112⁴, 117⁹, 127⁴, 151⁴, 155⁸, 173¹, 194³.

Van der Donck, Adriaen, cited, 90³, 93⁹, 97⁹-98⁷, 109², 111⁹-12¹, 114³, 118⁸, 127⁸-28¹, 179¹.

Vanderkemp, Francis Adrian, cited, 90⁴, 147¹.

Vegetable remedies, 195⁸-96⁵.

Villages, removal, 105⁵.

Violins, 177⁸.

War club, 125⁹.

Warlike usages, 131⁸-39⁷; declaration of war, 136⁷; memorial posts, and paintings on bark, 132²; running the gauntlet, 131⁴; use of sticks in battle, 138⁸-39¹; war dance, 137¹.

Watson, Elkanah, cited, 90⁴, 141⁹.

Weapons, 120⁸-31⁸; armor, 128¹; blowgun, 124⁴; bow and arrows, 122³; canoes as shields, 129⁸; darts, 120⁶; harpoons, 130⁸; javelins, 121²; shields, 127², 129¹; spears, 126⁹-27², 130⁵; tomahawk, 125⁸; war club, 125⁹-26⁹.

Weld, cited, 124^s-25^s.

Wetquescheck forts, 114^s.

Whistle, bamboo, 177^s.

Williams, Roger, cited, 90^s, 93^r, 94^s,

144^s, 157^s, 161^s, 178^s, 193^s.

Willow hurdle, 193^s.

Wilson, James Grant, cited, 90^s,
99^r, 99^s, 112^s, 117^o-18^s, 127^s, 151^s,
173^s, 194^s.

Winne, Rev. F. P., cited, 90^s, 126^s.

Wood, Silas, cited, 90^s, 96^s.

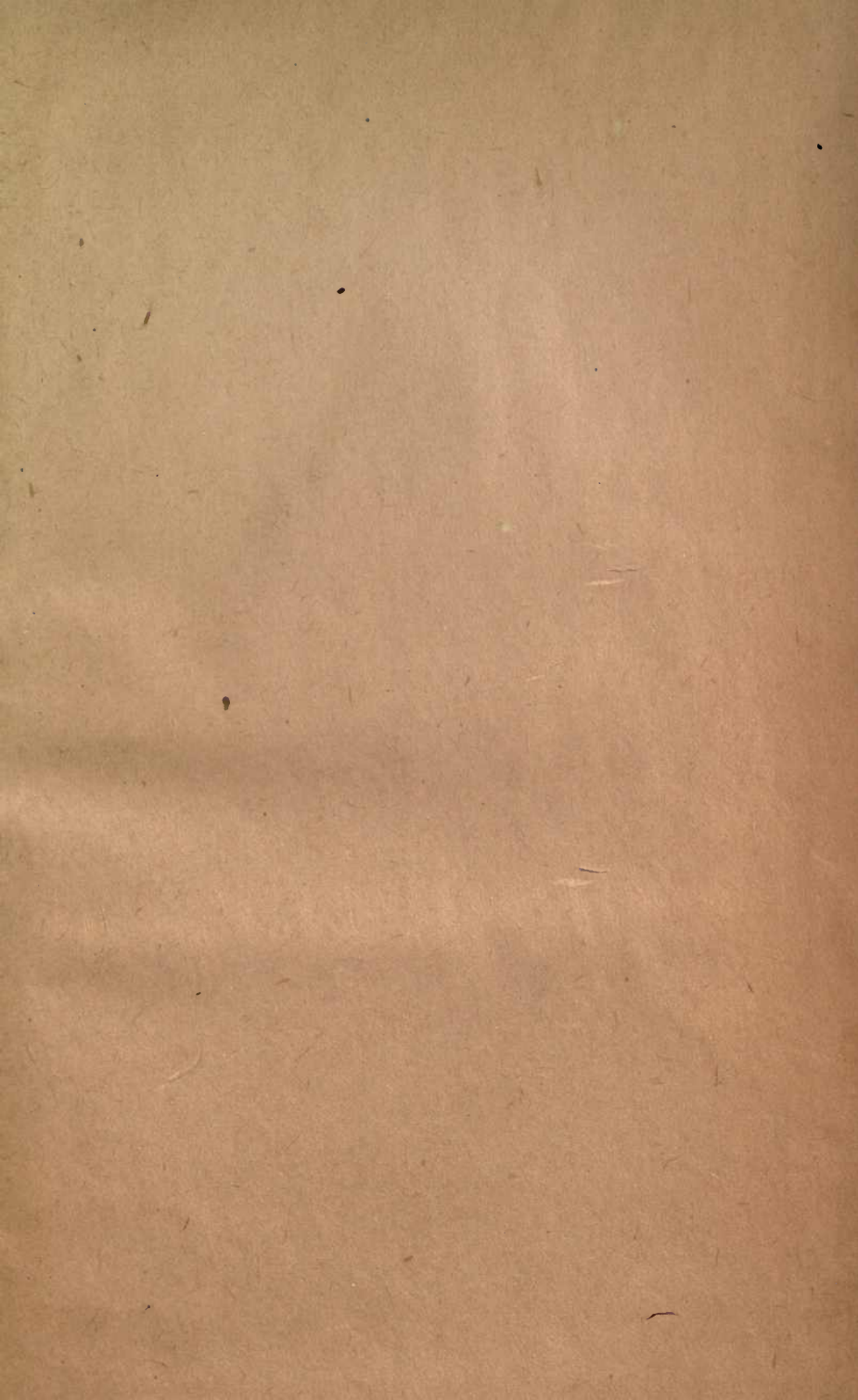
Wood, William, cited, 90^r, 95^s.

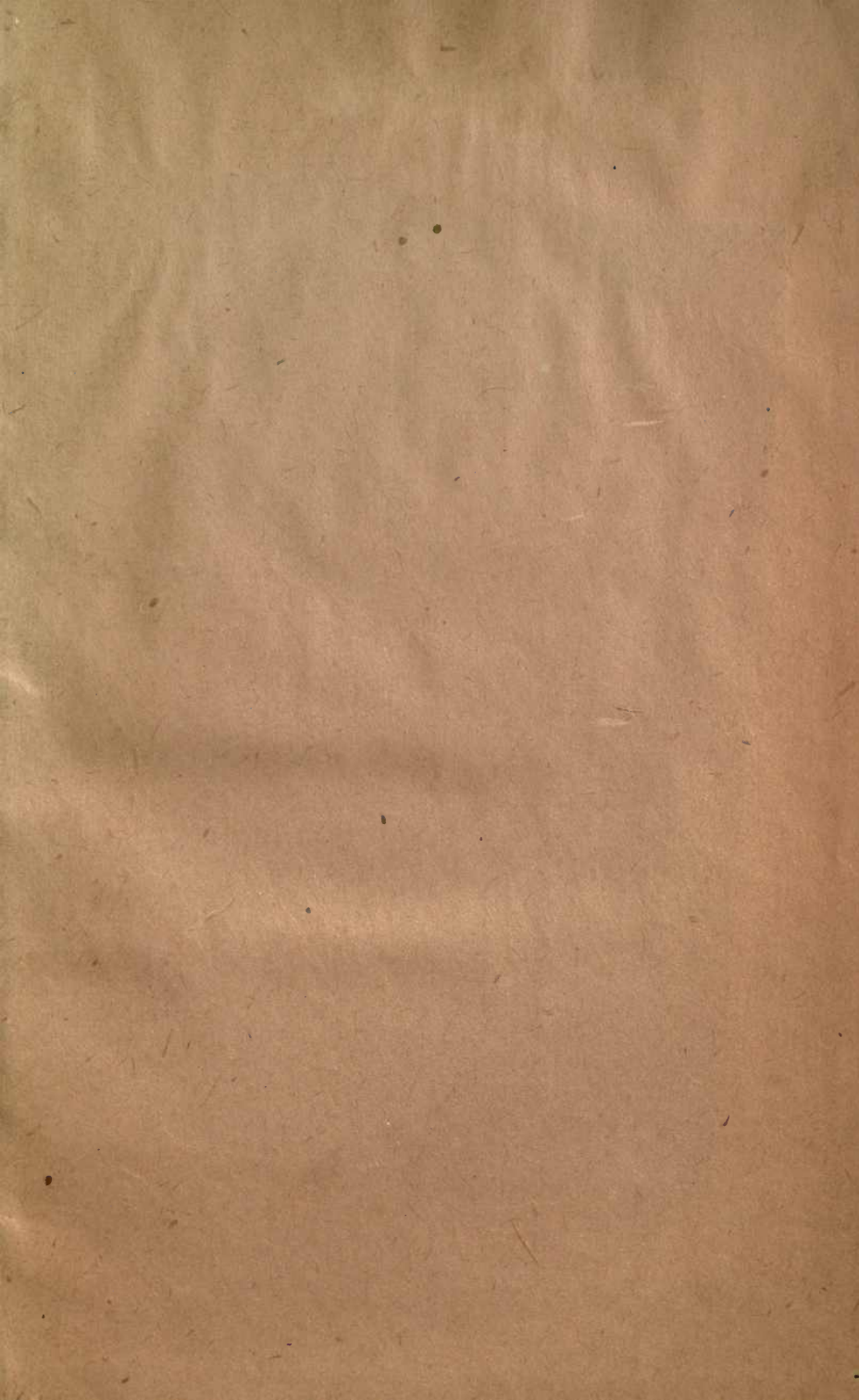
Wooden masks, 184^s.

Wooley, Rev. Charles, cited, 162^o.

Zeisberger, David, cited, 90^r, 120^s,
121^o, 145^s, 158^r, 174^r, 192^r; men-
tioned, 135^s, 158^s.







GENERAL LIBRARY
UNIVERSITY OF CALIFORNIA—BERKELEY

RETURN TO DESK FROM WHICH BORROWED
This book is due on the last date stamped below, or on the
date to which renewed.

Renewed books are subject to immediate recall.

4 Nov '54 B M

18 Feb 59 H J

OCT 22 1954 LU

REC'D LD

LIBRARY USE FEB 7 1959

APR 26 1958

22 Feb 60 G G

12 May '58 J M

REC'D LD

MAR 21 1960

REC'D LD

MAY 6 1958

